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With the continued emphasis on accountability for students, schools are working to increase the reading academic performance of their non-proficient students. Many remedial approaches fail to identify the individual strengths and weaknesses and tend to treat these students with a singular remedial focus on word identification (Allington, 2001). In this quantitative study, I explore the reading and motivational patterns present with elementary non-proficient readers representing marginalized groups. The results suggest that non-proficient readers do not need remediation with a singular focus, but have unique needs that must be taken into account when planning remediation. This study provided unique findings by examining the reading and motivational profiles of this unique sample of students. Six profiles were identified that represented strengths and weaknesses within the area of reading, as well as identifying preferred and less preferred motivators. The study also supported the idea that motivation is multi-dimensional and should be considered when providing support to struggling readers.

DIGGING DEEPER: UNDERSTANDING NON-PROFICIENT STUDENTS THROUGH AN UNDERSTANDING OF READING AND MOTIVATIONAL PROFILES

by

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CHAPTER I

INTRODUCTION

Students' academic performance continues to be a primary concern for our nation's schools and teachers. As teachers attempt to educate students, they face the problem of ensuring that all students, including those from marginalized populations (race, gender, religion, cultural group, or socioeconomic status) demonstrate proficiency (Brown-Jeffy & Cooper, 2011; NCLB, 2001). As policy makers continue to implement policies to address this goal, a focus is placed particularly on the performance of non-proficient readers because all students are expected to read at grade level by the end of the third grade. This focus is a result of federal accountability policies that evaluate students' performances on various accountability measures. This accountability places emphasis on all students being successful with reading.

The National Assessment of Educational Progress Assessment is a nationally (bi-annually) administered survey of achievement regarded as a source of information for state-to-state comparisons as it assesses students' ability to read within three different contexts; reading for literary and informational purposes, and to perform a specific task (schedules, directions, maps). NAEP scores have played a major role in the development of educational policy over the last decade (Swanson & Barlage, 2006). The most recent NAEP results (National Center for Education Statistics, 2015) showed that 64% of fourth-grade students and 66% of eighth-grade students failed to meet its proficiency

level. The results showed a 1% point decrease (4th grade) and 2% increase (8th grade) in the percent of student scoring below proficient on this assessment. Despite continued efforts at school reform via mandates, over half of our students are still unsuccessful on reading assessments.

As a result of nationwide testing via NAEP and other state level assessments, additional mandates resulted in the creation of No Child Left Behind (NCLB), which originally promised to have all students reading proficiently by the year 2014 (NCLB, 2001). The goals of NCLB emphasized proficiency of marginalized groups, including economically disadvantaged, minority, and English Language Learner students. This legislation required accountability systems for each state to annually monitor the academic performance of students in grades 3-12. The primary signature of NCLB, thus far, has been the imposition of high stakes testing of students, even though policy makers know that children of poverty are more likely to fail than children of other socioeconomic groups (McCaslin, 2009).

The Reading First initiative was developed as a part of NCLB and provided funding for the identification of scientifically-based research to improve reading instruction with the hope of reducing the number of non-proficient students (Learning Point Associates, 2004). It provided four pillars to guide reading programs; valid and reliable assessments, effective instructional programs and aligned materials, professional development, and dynamic instructional leadership. The main result of this initiative was the teaching of reading through phonics-driven instruction. This focus led to programs, professional development, and materials with this stated isolated remedial purpose.

Several problems arose as a result of accountability legislation and subsequent initiatives. The underlying problem is that the legislation's emphasis on non-proficient students resulted in them being treated as a homogenous group because their reading scores fell within a similar performance range (Afferbach, 2004). If these students are not homogenous, as Buly and Valencia (2002) claimed, then a one-size-fits-all emphasis on remediation via the teaching of isolated word identification skills and a failure to acknowledge other reading skills is misplaced. Previous researchers have warned not to rely on a singular remedial focus via single assessments to make important instructional decisions (Elmore, 2002; Shepard, 2000). These findings support the idea that additional information about non-proficient students' academic performance is necessary to help them achieve success.

Despite these warnings, schools regularly address the needs of non-proficient readers by providing intensive remedial instruction in various components of word recognition (Allington, 2001). These remedial approaches are aligned with the common assumption that phonics and phonemic awareness skills need to be mastered before students can learn to comprehend texts (National Reading Panel, 2000). This response is problematic in two ways. First, as stated earlier, non-proficient readers may not be a homogeneous group: individuals within this grouping may have different instructional needs than others. Second, this intervention only considers reading abilities without attending to their motivations for becoming engaged in reading. This alternative is particularly important because of recent studies showing the importance of students' motivation for reading as a key component of their later reading success (Guthrie, Hoa,

Wigfield, Tonks, Humenick & Littles, 2007; Unrau & Schlackman, 2006; Wang & Guthire, 2004).

Problem Statement

Schools' reliance on a one-size-fits-all approach to assisting struggling readers increased dramatically in recent years due to an intensified emphasis on test-driven accountability (Allington & McGill-Franzen, 1992; No Child Left Behind, 2001; Slavin, Cheun, Holmes, Madden, & Chamberlain, 2013). As stated earlier, remedial interventions mainly focused on improving non-proficient readers' word recognition abilities (Allington, 2009; Fisher & Ivey, 2006). Questions have been raised about whether such a one-dimensional focus adequately represents non-proficient students' literacy needs (Afferbach, 2004; Allington, 2001; Buly & Valencia, 2002; Lin, 2000; Shepard, 2000; Valencia & Buly, 2004). Such questions are important because struggling students may need a variety of remedial approaches if they are to become successful readers (Moje, 2004). As stated by Buly and Valencia (2002), one-size-fits-all reasoning tends to treat the symptoms of not being a proficient reader without understanding the many possible underlying causes for this lack of proficiency.

Buly and Valencia (2002) designed a study to identify these underlying causes, inclusive of reading skills and strategies that characterize non-proficient readers' strengths and weaknesses (Valencia, 2011). They examined the reading profiles of upper grade elementary students deemed non-proficient on a state mandated reading assessment because they failed to achieve at grade level. Instead of finding a common reason for their struggles, the authors discovered ten profiles based on patterns of students' ability to

identify words quickly (word identification), read fluently (fluency), and make meaning from the text read (meaning). Their findings underscored the need to develop different remedial programs based on students' individual strengths and weaknesses. Their research led to other studies where researchers identified multiple models of reading profiles for struggling readers across grade levels (Dennis, 2013; Leach, Scarborough, & Rescorla, 2003; Leseaux & Kieffer, 2010; Meyer, et al., 2013; Rupp & Leseaux, 2006; Pierce, Katzir, Wold, & Noam, 2007).

The work of Buly and Valencia (2002, 2004) challenges the assumption of a one-size-fits-all model for addressing the needs of struggling readers, and other researchers have joined in the challenge with the creation of different profiles to describe non-proficient students. While the identification of multiple profiles supports the need for various remedial approaches, it also raises questions about the extent to which there are consistent underlying structures represented in profiles across different studies. Without an understanding of this underlying structure, a one-size-fits-all approach may be as inappropriate for helping non-proficient readers as an any-profile-model approach. If we are to support struggling readers, particularly those from marginalized student populations, it is important to gain this understanding of the underlying constructs that determine the successful engagement of non-proficient readers in their academic studies.

Reading researchers have shown that low performing students are not a homogenous group (Dennis, 2013; Valencia & Buly, 2002); however, their profiles are limited to cognitive domains. The continued barrage of assessments being forced on students, as early as kindergarten, and focusing solely on isolated reading skills, continue

to impact their beliefs about reading and their reading performance. Previous researchers have warned not to rely on a singular assessment to make important decisions about children (Elmore, 2002; Shepard, 2000) and thus support the idea that additional information about students' values, beliefs and perceptions about reading are essential to providing effective remedial support to assist them with achieving success.

Baker and Wigfield (1999) designed a study to identify motivational profiles. They generated profiles of 5th and 6th grade regular education students. Through their profiles, they found that children's motivations for reading are multidimensional, originating from varied backgrounds and experiences. They identified seven profiles inclusive of different patterns of motivation from the areas of efficacy, importance, curiosity, involvement, challenge, recognition, grades, competition, social, compliance and work avoidance. Their profiles suggest that students should have differences in motivation and these occur in varied ways and purposes. Therefore, no students should be classified as motivated or not motivated, but should be assessed to determine their motivational preferences for reading activities.

Though their work addresses the need for educators to understand the motivational constructs represented by students, they failed to include three things. First, despite the intense accountability focus placed on non-proficient students from marginalized populations, their study did not specifically address these students. Second, while they addressed motivation, they lacked an explicit connection to students' reading performances to better understand them holistically. Finally, the study examined ethnic differences, but they did not include a specific focus on minority students because 52% of

their participants were Caucasian. This supports a need to specifically address marginalized groups.

Purpose of the Study

Existing studies have addressed either the reading profiles of non-proficient students or the motivational profiles of students in general, but the two have not been bridged. As well, these studies have lacked a focus on understanding marginalized student populations, including those from schools with high population of minorities, particularly African American and Hispanic students. The purpose of this study is to evaluate the reading and motivation profiles of elementary students, who have failed to pass their state's mandated reading assessment, and attend schools with similar student demographics, including a large percentage of minority students.

Research Questions

This study examined the reading and motivational profiles of non-proficient students across the upper elementary grades. The participating sample came from schools with a high percentage of students representing marginalized groups, mainly African-American, Hispanic, and those whose families lack economic resources.

1. What trends of reading and motivation for reading are represented in 3rd, 4th and 5th grade non-proficient students?
2. What underlying motivational and reading constructs represent non-proficient 3rd, 4th and 5th grade students?
3. What are the reading profiles of 3rd, 4th and 5th grade non-proficient students?

4. What are the motivation profiles of 3rd, 4th and 5th grade non-proficient students?
5. What are the reading and motivation profiles of 3rd, 4th and 5th grade non-proficient students?
6. What do these profiles tell us about the instructional needs of 3rd, 4th and 5th grade non-proficient students?

Significance of the Study

Existing studies have addressed the reading profiles of non-proficient students as well as the motivational profiles of a generic sample of students, but the two have not been connected. They have failed to place an emphasis on understanding marginalized students, including students of color, especially those from low-income families, who struggle with reading in the elementary grades. Studies have shown that struggling readers can display a combination of both word recognition and meaning difficulties (Buly & Valencia, 2002; Dennis 2012) and that students may have varying motivational characteristics (Baker & Wigfield, 1999). When teachers provide instruction and remediation to non-proficient readers, the work must include multiple areas of reading as well as motivation. Motivation is a key factor in a student's choice to read, their beliefs about their reading, and the value they place upon the act of reading (Cambria & Guthrie, 2010; Schiefele, 1999). Through the use of motivation as a component in reading profiles that directly address marginalized student groups, teachers might have a better chance to increase the academic achievement of non-proficient minority students. In addition, the profiles from this research can add to the existing literature by offering a

sample that comes directly from low income schools that are not identified as high performing. Through this work, researchers and teacher educators can begin to think about the specific reading factors represented as well as the role that motivation plays specifically for non-proficient, low-income, minority students.

CHAPTER II

REVIEW OF LITERATURE

The primary signature of NCLB, thus far, has been the imposition of high stakes testing of students to monitor academic performance; this monitoring has an equal goal for all students, 100% proficiency, which has had negative implications for students' performance and motivation throughout all schools (Au, 2009; McCaslin, 2009). Increased accountability via testing was initially thought to be a positive achievement by measuring and comparing standardized assessment results within schools and states, and by motivating the unmotivated to learn (Orfield & Kornhaber, 2001); however, testing has negatively impacted the motivation of students and placed limits on their opportunities to reach academic expectations (Amrein & Berliner, 2003; Au, 2009).

An abundance of federal funds have been devoted to increasing achievement for students. Unfortunately, despite the appearance of vast amounts of federal funding, accountability-driven reforms with continued and frequent high-stakes testing only confirm what we already knew regarding student reading achievement, in that, the same populations continue to fail (National Center for Education Statistics, 2015). Two possible reasons for continued failure include the following. First, there is a lack of any emphasis on understanding students' motivation. This includes acknowledging why students become engaged in some activities and not others (Guthrie, Coddington, & Wigfield, 2009) and using this information to modify instructional practices for students.

Second, the majority of the studies failed to include students from marginalized groups, such as African American and Hispanic, particularly those who are economically disadvantaged, the very students whom this legislation was intended to help. This lack of inclusion of these groups limits our understanding of why these students have not improved their achievement (Unrau & Schlackman, 2006).

The purpose of this section is to discuss and evaluate existing research related to reading profiles and the need to address motivation profiles as well to more fully understand why low-achievers continue to fail to perform at grade level. It will also address the reasons and implications of addressing marginalized groups when attempting to understand non-proficient readers. This section will be discussed in three major parts. In the first part, I will discuss studies where researchers have identified profiles of readers (non-proficient in isolation or with proficient students) to see if a common set of profiles exists beneath different findings. I will do this by examining patterns of performance of struggling students along with a highlight of the samples included. I will start this evaluation with a more detailed explanation of the Buly and Valencia (2002) study, followed by a review of subsequent studies of reading profiles, and then I will evaluate the extent to which a common set of profiles or an underlying structure exists to help educators understand the unique needs of struggling readers.

In the second part, I will evaluate whether the motivational profiles for non-proficient readers represent the same variability as their reading profiles by examining the patterns and constructs used in different studies. In this section, I will highlight existing research that assessed the motivational patterns of students. This second part is important

because researchers have identified motivation as a critical factor in determining the extent to which students become engaged in their studies (Baker & Wigfield, 1999; Mazzoni, Gambrell, & Korkeamaki, 1999). The section will conclude with how my suggested study fills an existing gap in the research.

In the third part, I will focus on whether certain marginalized groups have been represented adequately within existing research. I will highlight the need to address these groups in research related to reading and motivation profiles and how the implications of the research will improve the outcomes for these groups of students. Last, I will finish the review with recommendations for future research based on the gaps within existing research.

Review of Reading Profiles Literature

In the initial study by Buly and Valencia (2002), their investigation did not unveil a singular reason for failure on the mandated state proficiency test. Instead, the authors used cluster analysis to group non-proficient students based on the similarities with their reading performance levels. They discovered profiles based on students' strengths and weaknesses with identifying words quickly (word identification), reading fluently (fluency), or making meaning from the text read (meaning). There were ten profiles initially identified, grouped into four pairs, followed by two singular profiles. The authors later (2004) combined the four pairs of double profiles based on their statistical similarities for a total of six profiles to facilitate its understanding by practitioners. Respectively, the grouped profiles included:

- ***Cluster 1 & 2: Automatic Word Callers* 18%:** The students in this cluster are stronger in word identification and fluency than meaning.
- ***Cluster 3: Struggling Word Callers* 15%:** The students in this cluster are experiencing some difficulty in word identification and meaning but able to read with acceptable fluency.
- ***Cluster 4: Word Stumblers* 18%:** The students in this cluster exhibit strength in making meaning but have difficulty with word identification and fluently reading text.
- ***Cluster 5 & 6: Slow and Steady Comprehenders* 24%:** The students in this cluster are lacking in fluency but their word identification and meaning abilities are relatively strong, with meaning being the stronger.
- ***Cluster 7 & 8: Slow Word Callers* 17%:** The students in this cluster are displaying difficulties in meaning and fluency with strength being in word identification.
- ***Cluster 9 & 10: Disabled Readers* 9%:** The students in this cluster are low in all three areas and represent the smallest cluster of students.

In their reformulation, Valencia and Buly (2004) focused on the implications for classroom practice for each of the profiles based on a prototypical student in each cluster. Accordingly, the authors identified an underlying structure: there was only one cluster with students performing low in all three areas, two clusters contained students with strengths in more than one area (word identification and fluency, word identification and meaning), and the remaining profiles consisted of strengths in only one area with the other two areas as weaknesses. Each description provided an in-depth interpretation of

the profiles and their respective representations with regards to the literacy components. Through their profiles, the researchers challenged whether the one-size- fits all phonics and word-identification programs were appropriate for all students, a caution against overgeneralizing students' needs. As schools address the needs of non-proficient students, they need to go beyond the scores of state-mandated standardized assessments to identify student instructional needs.

The work of Buly and Valencia (2002, 2004) led to other studies where researchers attempted to identify and analyze reading profiles, particularly for those students who were identified as non-proficient (Dennis, 2013; Leach et. Al, 2003; Leseaux & Kieffer, 2010; Meyer et. al, 2013; Rupp & Leseaux, 2006; Pierce et. al, 2007). Using the work of Valencia and Buly (2002, 2004) as a template, I evaluated these studies by examining the nature and scope of their measures, how they identified non-proficient readers, and their analytical procedures. My intent was to determine the extent to which profiles for struggling readers varied across studies and whether there was an underlying structure beneath their profiles. Table 1 below presents a comparison of the studies including the areas measured and assessments used. In this section I will review each study, in chronological order, and then provide an evaluation of their common properties and what they imply for the identification of reading profiles for struggling readers. For each study, researchers used either clusters or profiles to identify their categories. I will use the terms used by researchers when describing their results.

Leach, Scarborough, and Rescorla (2003) used eight measures of students' word recognition fluency, vocabulary, and comprehension abilities to identify the profiles for

3rd, 4th, and 5th grade students (n=161), from both affluent and economically diverse populations, 5% of whom were minority. Splitting scores into high and low categories on each of the measures, they identified four distinct profiles:

Profile 1: (8%) *Comprehension deficit/No word deficit*

Profile 2: (17%) *Word deficit but no comprehension deficit*

Profile 3: (16%) *Deficit in both word and comprehension*

Profile 4: (59%) *No deficits in comprehension or word.*

The profiles supported heterogeneity of reading development for these students with those students identified as late-emerging reading disabilities being balanced in their present within each profile.

Rupp and Leseaux (2006) investigated the profiles of proficient and non-proficient 4th grade students (n=1,111). A lack of proficiency was determined based on the students' unsuccessful scores on district mandated reading assessments. They assessed speed and accuracy for reading words; spelling; working-memory; and phonological and syntactic awareness. The researchers used factor analysis to develop high and low split scores for word-level skills, working-memory, and language skills, then grouped students into four distinct clusters representing a combination of high and low scores:

Cluster 1: (34%) *Low Word, Low Memory*

Cluster 2: (11%) *Low word, high memory*

Cluster 3: (16%) *High word, Low memory*

Cluster 4: (39%) *High word, High memory*.

Students classified as non-proficient were unequally represented in each cluster, with the majority (76.8%) falling into cluster one.

Pierce, Katzir, Wold, and Noam (2007) evaluated urban 2nd and 3rd grade students who attended an after-school program and scored more than two-thirds of a standard deviation below the mean on one of the subtests or composite of the Test of Word Reading Efficiency (TOWRE) assessment. Using factor scores for decoding, fluency, text level skills, and vocabulary, they generated a four-cluster model using a cluster analysis:

> ***Cluster 1: (27%)*** *represent students with high vocabulary and decoding scores, low word and text level skill factors;*
>
> ***Cluster 2: (19%)*** *represent students with high scores on word level efficiency, text level, and vocabulary factors and average decoding scores;*
>
> ***Cluster 3: (28%)*** *represent students with low scores on vocabulary and at or above the mean level for decoding, word level, and text level;*
>
> ***Cluster 4: (26%)*** *low in all four areas.*

These profiles provided support for the idea that non-proficient readers have varied reading strengths and weaknesses.

Leseaux and Kieffer (2010) identified the literacy profiles of students in 6th grade who were language minorities and native English speakers in a low-income urban setting. The Gates-MacGinitie Reading Comprehension assessment was used to identify students who scored below the 35th percentile. Subsequent testing included vocabulary, decoding,

passage fluency, and working memory assessments. Using latent class analysis, three profiles were generated:

> ***Automatic Word Callers: (18.3%)*** *these students are characterized by above-average pseudo-word reading accuracy, substantially below-average vocabulary skills, and average range fluency skills;*
>
> ***Slow Word Callers: (60.3%)*** *these students are characterized by above-average pseudo-word reading accuracy skills, far-below-average vocabulary skills, and low-average fluency skills; and*
>
> ***Globally Impaired Readers: (21.4%)*** *these students are characterized by below-average performance on all measures.*

An analysis of these profiles found that language status was not a predictor of membership in the profiles.

Dennis (2013) evaluated 6th, 7th, and 8th grade students who failed the state reading assessments the previous school year. The researcher included assessments for phonemic awareness, phonics, fluency, vocabulary, and comprehension and identified the study as a purposeful extension of the work of Valencia and Buly (2004) with a different sample. Using cluster analyses, she identified four profiles using three factors which she labelled as meaning, decoding, and rate:

> ***Cluster 1: Slow and Steady Comprehenders (24%)*** *These students have the highest scores in meaning with low scores in decoding and rate;*
>
> ***Cluster 2: Slow Word Callers (26%)*** *These students have highest scores in decoding, with average meaning scores and low rate scores;*

Cluster 3: Automatic Word Callers (24%) *These students are highest in decoding, with average rate scores and low meaning scores;*

Cluster 4: Struggling Word Callers (26%) *These students are highest in rate, with average comprehension scores and low decoding scores.*

These profiles demonstrate that non-proficient students have capabilities and areas that require intervention.

Meyer et al. (2013) evaluated 5th and 6th grade students, who were identified as non-proficient because they scored below the 50th percentile on mandated end-of-grade standardized reading tests. The authors assessed word recognition in isolation, oral reading accuracy and rate, vocabulary, and comprehension. They categorized students as high or low on each assessment area (print processing and vocabulary) to develop four profiles:

Cluster 1 (26%) *These students have high scores on both print processing measures and vocabulary measures;*

Cluster 2 (48%) *These students scored high on print processing measure but low on vocabulary measures;*

Cluster 3 (12%) *These students scored low on print processing but high on vocabulary measures; and*

Cluster 4 (14%) *These students scored low on print processing and vocabulary measures.*

Although the researchers assessed comprehension, it was not directly included as a part of the profiles generated.

Before determining the extent to which each of these studies supports the identification of a common set of profiles or an underlying structure, I examined each study to see if the same dimensions of reading performance were evaluated. For this purpose, I used the five components of reading, as identified by the National Reading Panel (NICHD, 2000). Each of these components is interrelated, thereby raising the possibility of students being strong or weak in one or more areas. While researchers have criticized the Panel for its procedures and subsequent policies regarding literacy instruction (Allington, 2009), there is general agreement as to the importance of their components with promoting reading development. They include: (a) phonemic awareness, (b) phonics, (c) fluency, (d) vocabulary, and (e) comprehension. A definition of each component is presented below (Learning Point Associates, 2004):

A. ***Phonemic awareness*** *—an awareness of and the ability to focus and manipulate the individual sounds (phonemes) in spoken words. It includes skills such as isolating phonemes, blending onset-rimes, blending and deleting phonemes, adding and substituting phonemes, and segmenting words into phonemes. This part of reading instruction allows students to understand spoken words are made up of individual sounds.*

B. ***Phonics*** *—the study and use of sound/spelling relationships and syllable patterns to help students read written words. It includes skills such as identifying letters and sounds, and blending sounds. This is a part of reading instruction that should not become a dominant component of a reading program, but a means towards the end goal of reading, comprehension.*

C. ***Fluency*** *—reading text with sufficient speed, accuracy and expression to support comprehension. This includes grouping words into phrases that are easier to read. A lack of fluency requires a reader to use cognitive resources for reading the words that could be used to make meaning from the text.*

D. ***Vocabulary*** *—the body of words and their meanings that students must know and understand to comprehend text. This includes skills such as word parts or roots and the use of context clues to gain the meaning of unknown words. In order for a student's vocabulary to increase, they must come in contact with words outside his or her current vocabulary.*

E. ***Comprehension*** *—the ability to make meaning requiring specific skills and strategies, vocabulary, background knowledge and verbal reasoning skills. Comprehension includes strategies such as comprehension monitoring, asking and answering questions, using prior knowledge, and summarizing what has been read. This is the final goal of reading instruction.*

Table 1 illustrates similarities and differences between the reading profile studies, only Buly and Valencia (2002) and Dennis (2013) assessed each of the National Reading Panels (NICHD, 2000) five components of reading in their identification of reading profiles. Based on their factor analysis, phonemic awareness and phonics were included under the label "word identification" (Buly & Valencia, 2002) and vocabulary and comprehension were included under the label "meaning." For both studies, fluency or rate remained as an isolated factor. There are direct similarities between the strengths and weaknesses identified in four of Buly's and Valencia's (2004) profiles and those

identified by Dennis (2013). The "Disabled Readers" group (9%) was not identified by Dennis; quite possibly because she included older students, representative of multiple grades, who probably did not have low scores on her word recognition measures because such indices were designed primarily for younger students. For the profile, "Slow and Steady Comprehenders", it is possible that these students were placed in other categories because of the nature of clustering process. Both Buly and Valencia (2004) and Dennis (2013) used the cluster analysis methodology, but there was not a consistent description across studies explaining the exact steps and criteria used to generate the profiles to determine if this could be a cause for the difference in the number of profiles generated.

Table 1

Comparison of Areas Assessed in Reading Literature

	Buly & Valencia (2002, 2004)	Leach, Scarborough, & Rescorla (2003)	Rupp & Leseaux (2006)	Pierce, Katzir, Wold, & Noam (2007)	Leseaux & Kieffer (2010)	Dennis (2013)	Meyer et al. (2013)
Phonemic Awareness	X		X			X	
Phonics	X		Spelling	X	X	X	X
Fluency	X	X		X	X	X	X
Vocabulary	X	X		X	X	X	X
Comprehension	X	X	Working Memory	Text Skills	Working Memory	X	
Number of Profiles	10 then 6	4	4	4	3	4	4

While these two studies failed to identify a similar number of profiles, they do support the idea of a common underlying structure for non-proficient students. The most common underlying structures were word recognition, fluency, and meaning (comprehension and vocabulary). Based on the nature of the sample and analytical procedures, researchers might discover additional profiles, particularly if the two components of meaning – vocabulary and comprehension—formed separate factors. A similar argument could be made if researchers evaluated the reading profiles of beginning readers and the components of word recognition – phonemic awareness and decoding—split into separate factors. Regardless, at this point, Buly and Valencia (2002) and Dennis (2013) identified multiple profiles and their findings provided an underlying structure by which educators could develop more multi-dimensional intervention programs to meet non-proficient students reading needs.

Each of the remaining studies identified different profiles based on how the authors assessed reading. For example, Leach, Scarborough, and Rescorla (2003) and Rupp and Leseaux (2006) assessed fluency, but neither study found a separate factor for this construct. Furthermore, studies by Pierce, Katzir, Wold, and Noam (2007); Leseaux & Kieffer (2010); and Meyer et al. (2013) used different assessments for comprehension and word recognition. Despite these differences in how constructs were assessed across each of these studies, an underlying structure still appeared whereby non-proficient students had difficulty with one of more of the identified areas.

After examining these studies, no one set of profiles represented all non-proficient readers; there are multiple profiles with students' performances varying across the

dimensions of word recognition, meaning (vocabulary and comprehension), and fluency. There is heterogeneity within the non-proficient student classification and this finding requires the development of corresponding interventions to address the unique needs of students. What still needs to be discovered, however, is whether different motivational profiles exist among categories of non-proficient students, similar to what was discovered in reading by Buly and Valencia (2002) and Dennis (2013). This link between motivation and reading is important because numerous studies document the critical role of motivation in understanding students' academic performances (Mazzoni, Gambrell, & Korkeamaki, 1999). The next section will be used to evaluate existing students focused on motivation for reading.

Review of Motivation Profiles Literature

Consistent with the expectancy/value motivation theory, students' willingness to invest time and effort in academic studies depends on their expectations for success and the perceived value of achievement (Atkinson & Feather, 1966; Eccles, J. S., et al., 1983; Heckhausen, 1977). Researchers view motivation as complex and domain specific (Paris & Turner, 1994; Wigfield, Guthrie, Tonks, & Perencevich, 2004) and a multifaceted process, inclusive of choices and beliefs (Watkins & Coffee, 2004; Wigfield, Guthrie, Tonks, & Perencevich, 2004). This process explains why students either approach or avoid a task and the reasons for their engagement or lack thereof. Thus, on a daily basis, motivation helps teachers to understand what attracts a student to start, continue, end, or avoid an activity (Graham & Taylor, 2002). It is a key factor in understanding students' choice to read, beliefs about reading, and the value they place upon the act of reading

(Cambria & Guthrie, 2010; Eccles, Wigfield, & Schiefele, 1998; Schiefele, 1999). Similar to reading profile research, teachers who employ a one-size-fits-all model to promote motivation, quite possibly, fail to acknowledge its multifaceted nature, thereby ignoring the individualized needs of some students (Valencia & Buly, 2004).

Motivation researchers have used the expectancy/value theory to conceptualize approaches for understanding the non-cognitive factors impacting student achievement. One popular approach focuses on learned helplessness, defined as a lack of persistence in tasks that could realistically be mastered, usually because of a lack of effort caused by repeated failures (Luchow, Crowl & Kahn, 1985). Such behaviors are problematic because when students lack persistence, they give up, and thus have minimal chance for success. Another example is the study of anxiety. People experience high levels of anxiety when they believe that they are not competent to perform a certain behavior (Stumpf, Brief, & Hartman, 1987), which interferes with their ability to attend, thereby having a negative influence on their beliefs and efficacy for learning. Each example, learned helplessness and anxiety show how students who lack expectancies for success and do not value learning become alienated from their academic studies. This lack of engagement leads to failure and eventually to being labeled as non-proficient. While these approaches help educators to understand the behaviors and attitudes of non-proficient students, they were not specific to any particular discipline; thus, we do not know how these profiles apply to reading.

Wigfield and Guthrie (1995) used the expectancy-value theory to bridge the gap between reading and motivation research (Atkinson & Feathers, 1966; Heckhausen,

1977, 1991). They developed the Motivations for Reading Questionnaire (*MRQ*) to define and evaluate students' expectations and values regarding their motivation for reading. Initially, this measure had 82 items, most of which were taken from Eccles' Achievement Motivation Research Project (Eccles et. al, 1983) – ability and efficacy beliefs, subjective task values, achievement goals, intrinsic motivation, along with items related to attitudes about reading and motivation for reading.

In discussing motivation for reading, I will focus mainly on three studies. I will summarize motivation prior to returning to these studies to look at how they attempted to bridge the gap between motivation and reading. In the first study, Wigfield and Guthrie (1997) studied 4th and 5th graders across two semesters and identified 53 items and 11 constructs using the MRQ. The constructs and their definitions are presented in Table 3 (Wigfield, 1997). Using factor analysis, the researchers determined the existence of three higher order dimensions of motivation from these 11 constructs. The three dimensions are *Extrinsic Motivation* (social, efficacy, involvement, curiosity, recognition, and challenge), *Intrinsic Motivation* (Compliance, grades, recognition (Spring), and importance), and *Competition and Work Avoidance* (Wigfield & Guthrie, 1997). The dimensions' structure was relatively stable across the two semesters.

In the second study, Baker and Wigfield (1999) extended the initial work of Wigfield and Guthrie (1997) by directly examining links with motivation and reading achievement, examining differences in motivation based on student characteristics, and determining what motivational profiles exist for students by using data from the MRQ, Reading Activity Inventory, Gates-MacGinitie Reading Test, Comprehensive Test of

Basic Skills (Standardized Assessment) and a performance assessment. They used confirmatory factor analysis of their 5th and 6th graders data to validate the identification of the 11 constructs of Wigfield and Guthrie (1997).

Cluster analysis of the MRQ placed students into seven clusters (profiles):

1. ***Very Low Reading Motivation*** (n=14, 4%) The students in this cluster are characterized by low scores across all constructs except work avoidance, in which they scored the highest, just below the mean.
2. ***Low Reading Motivation*** (n=40, 11%) The students in this cluster had low ratings across nine constructs with the exception of work avoidance, which were the highest in this cluster. Their scores for competition were slightly below the mean.
3. ***Low Competition, Efficacy and Recognition*** (n=28, 8%) The students in this cluster had the lowest scores in competition, efficacy and recognition and slightly below average scores for compliance with the remaining constructs having average scores.
4. ***Low Importance*** (n=28, 8%) The students in this cluster had average scores on eight constructs. Importance scores were lowest, well below the mean, and competition scores were slightly below the mean, with social scores falling just above the mean.
5. ***Competitive and Work Avoidant*** (n=80, 21%) The students in this cluster have average scores on eight constructs. Challenge scores were slightly below the mean with competition and work avoidance scores falling just above the mean.

6. ***Low Competition and Work Avoidance; High Importance and Compliance*** (n=58, 15%) The students in this cluster had average scores on seven constructs. Work avoidance and competition scores fell slightly below the mean with compliance and importance scores slightly above the mean.
7. ***High Reading Motivation*** (n=123, 33%) This cluster contained the largest percentage of students who had scores above the mean in all areas, with the exception of work avoidance that fell slightly below the mean.

These clusters underscore the heterogeneity of students' motivation for reading as students were somewhat evenly split among the clusters, with no cluster containing more than 33% of the sample. Students in the first two clusters, labeled very low and low reading motivation were characterized by high work avoidant scores. Students in the last two clusters Low Competition and Work Avoidance and High Reading Motivation were the opposite with low work avoidance scores. The remaining clusters varied by levels of competition, need for recognition, importance attached to reading, and efficacy. Only in one cluster, low competition and work avoidance: high importance and compliance, did students demonstrate high scores on all the positive reading indices.

In the third study, Guthrie, Coddington, and Wigfield (2009) determined that existing motivation literature lacked a specific focus on the constructs (intrinsic motivation, avoidance, self-efficacy and perceived difficulty) that contribute to positive motivation or undermine motivation for reading. With this in mind, they wanted to capture and better understand the relationships between these constructs. They evaluated 5th grade African American and Caucasian student responses for only two of the four

motivation dimensions: intrinsic motivation and work avoidance to identify four profiles. Using a different analytical approach, the researchers ordered students' scores from highest to lowest, then separated students into distinct groups of high or low by splitting the scores at the median. This approach allowed the researchers to form profiles consisting of clear independent constructs. They identified four profiles. They included:

1. ***Avid*** (high intrinsic and low avoidance) students who have reading interests, enjoy reading in and out of school, and do not avoid school reading.
2. ***Apathetic*** (low intrinsic and low avoidance) students who are low on intrinsic reading and avoidance of reading.
3. ***Ambivalent*** (high on intrinsic and high avoidance) students who have intrinsic motivation for some texts but not others with avoidance of reading high for some kinds of reading.
4. ***Averse*** (low intrinsic and high avoidance) students who are actively opposed to most kinds of reading and possess few reading interests.

The methodology used allowed for clearly defined profiles. Each profile contains students with either high or low scores on each of the two constructs.

Across the three studies, given the consistency with some constructs and the stability of their findings at different points of time, these results underscored the potential for the MRQ to develop specific profiles for different types of non-proficient readers. The one challenge to developing these profiles relates to the types of reading measures included or not included in these studies.

In the first study, Wigfield and Guthrie (1997) used the Reading Activity Inventory, a measure of the breadth and depth of students' personal reading habits as their reading component. They used this instrument because such behaviors were a strong predictor of reading achievement. They found the social, self-efficacy, curiosity, involvement, recognition, grades, and importance constructs had the strongest relationship to reading activity (Wigfield & Guthrie, 1997). Because this measure looked at personal reading habits instead of actual classroom performances, it is of limited use for identifying different profiles in the classroom for non-proficient readers.

In the second study, Baker and Wigfield (1999) used the Reading Activity Inventory, the Gates-MacGinitie Reading Test, the Comprehensive Test of Basic Skills (Standardized Assessment) and a researcher-developed performance assessment, where students read passages and answered open-ended questions to measure reading performance. With personalized reading habits, the results were obvious – students who had the greatest breadth and depth with their reading habits had more positive motivational outcomes than did students who read less widely or frequently. With the formal reading measures, no differences were found between the clusters. Finally, with the performance measure, only one difference was discovered: students in the sixth profile significantly outscored students in the other profiles.

In the third study, Guthrie, Coddington, and Wigfield (2009) used the Gates-Macginitie Reading Test, Woodcock-Johnson Fluency Test, and researcher-developed word recognition test to measure reading performance. The only finding was a positive relationship between scores on the Gates-McGinitie and intrinsic motivation for the

Caucasian students. No such relationship was found for the African-American/Black students.

The existing research has supported the need to understand non-proficient students from both reading and motivation for reading perspectives. What is missing is an understanding of which non-proficient students should be the focus of research. The next section will examine the research to determine which groups of students are not adequately represented and why they should be the focus of future research.

Need for Marginalized Groups

While there is evidence of a need to understand non-proficient students from both a cognitive and non-cognitive perspective, there is a need to understand specific groups of these students, particularly those students who have not performed well despite schools' efforts to address their needs. Au (2009) referred to students, primarily minority students with families who lack economic resources, as residing in "zipcode" schools because their geography was a better predictor of their overall achievements in public schools than any other measure of their performance. One possible explanation for this effect is the nature of our reforms to improve their performances, in that, students might need interventions that go beyond the present focus on improving word recognition abilities. As a result, I argue that we need accurate evaluations of their reading strengths and weaknesses if we are to break this cycle of underachievement for these student populations.

Since the Coleman Report in 1966, a distinguishable performance gap has been identified between Caucasian and African American students has been a concern for

educators, researchers, and policy makers (Clotfelter, Ladd, & Vigdor, 2009). While the term achievement gap carries many negative connotations, this term is used as this term was used by researchers to support the gap. The preferred term would be opportunity gap as this removes the deficit perspective present within the other term. As well, the achievement gap has been noted between students from low and high socioeconomic backgrounds (Milner, 2013). This achievement gap is wide and despite numerous efforts and initiatives, continues to exist (Lee, Grigg, & Donahue, 2007). NCLB placed a strong focus on the differences in achievement by identifying equal performance requirements for each group of students that must be met each year through minimal growth requirements. To close the performance gap for minority students, schools must provide high quality instruction (Au, 2009) and understand the performances represented in each group. Without a direct focus on understanding what reading and motivational constructs are represented in these groups, there will continue to be interventions and strategies that fail to address the needs of students from these marginalized groups. To understand the need for representation of certain students, a few questions must be answered. Is there an opportunity (achievement) gap? What specific groups are those which are truly a part of this gap?

The most recent NAEP assessment results (National Center for Education Statistics, 2015) showed a 1% point decrease (4^{th} grade) and 2% increase (8^{th} grade) in the percent of student scoring below proficient on this assessment since the previous assessment. Despite continued efforts at school reform via mandates, over half of our students are still unsuccessful on reading assessments. Although we see a lack of success

overall, there are differences in achievement for many of the groups who are identified through the NCLB legislation as marginalized groups. To visually represent the trends of performance and the gaps that exist between the marginalized and non-marginalized groups, I created the line graphs representing differences in proficiency for minority and non-minority groups. These graphs represent the fourth-grade reading proficiency performance on the NAEP from 2002, the first assessment prior to NCLB, through 2015, the latest administration of the NAEP (National Center for Education Statistics, 2015). The first graph represents the performance trends for Caucasian, African American, and Hispanic students.

Figure 1 illustrates several key accountability patterns related to ethnicity. First, there is an increase in the performance for the three groups from 2003 through the last administration in 2015. Second, while there has been an increase in performance for these three groups, the achievement gap between Caucasian students and ethnic minority students continues to exist. The achievement gap since 2002 between Caucasian and the ethnic minority groups has decreased minimally, but at no point did the performance level for African American or Hispanic students meet the baseline of Caucasian students after implementation of NCLB in 2002, Last, between the previous (2013) and current administration (2015) of the NAEP, there was no growth noted for the Caucasian nor African American groups, with a single percentage point increase for Hispanic students.

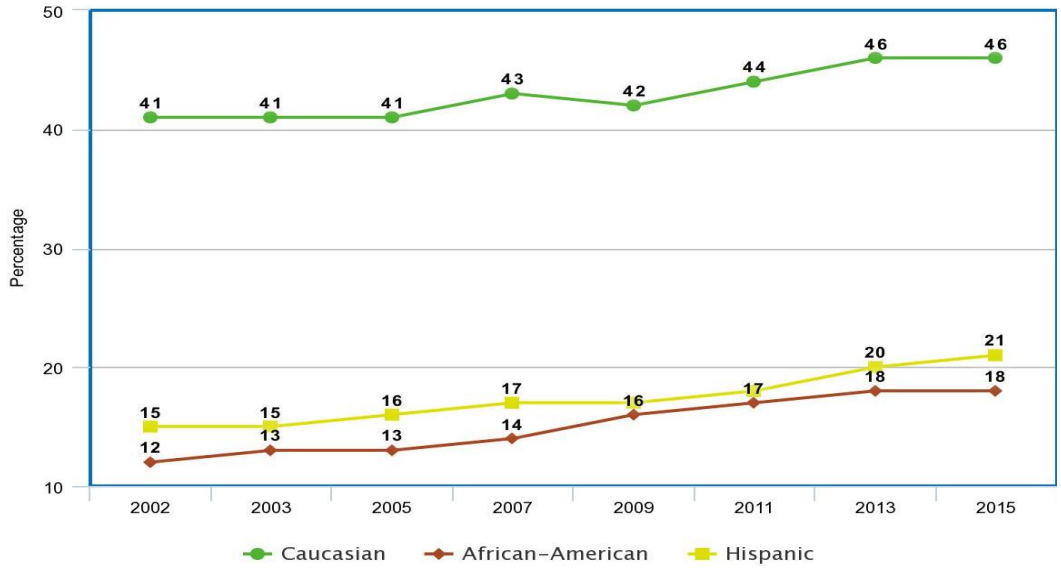

Figure 1. NAEP Trends Ethnicity Comparisons

Need for Economically Disadvantaged Students

Similar to the first graph, Figure 2 identifies some key accountability patterns related to economic status. First, there has been significant positive growth since 2003 for both economically advantaged and economically disadvantaged students. Second, while there has been growth noted, there is still a significant achievement gap between students representing these two economic categories. Students who are from economically disadvantaged situations continue to perform at lower levels despite continuous legislation. At no point did students in the lower economic group match the baseline performance of the higher economic group. Last, although there is growth, students from economically disadvantaged situations are not growing at a rate comparable to their counterparts. Economically disadvantaged students have grown a total of 6% in the 12 years since NCLB, while their counterparts have grown 10%.

The achievement gap from assessment data is a reality for both economically disadvantaged and African American students. Despite continuous reforms and legislation, the gap does not appear to be closing, but is larger than when initially assessed via NAEP reading assessments. Therefore, it is essential to include these marginalized populations in research to better understand their patterns of cognitive and/or non-cognitive factors. It is essential because policy effects and responses must be carefully studied to understand the impact on closing achievement gaps for marginalized groups.

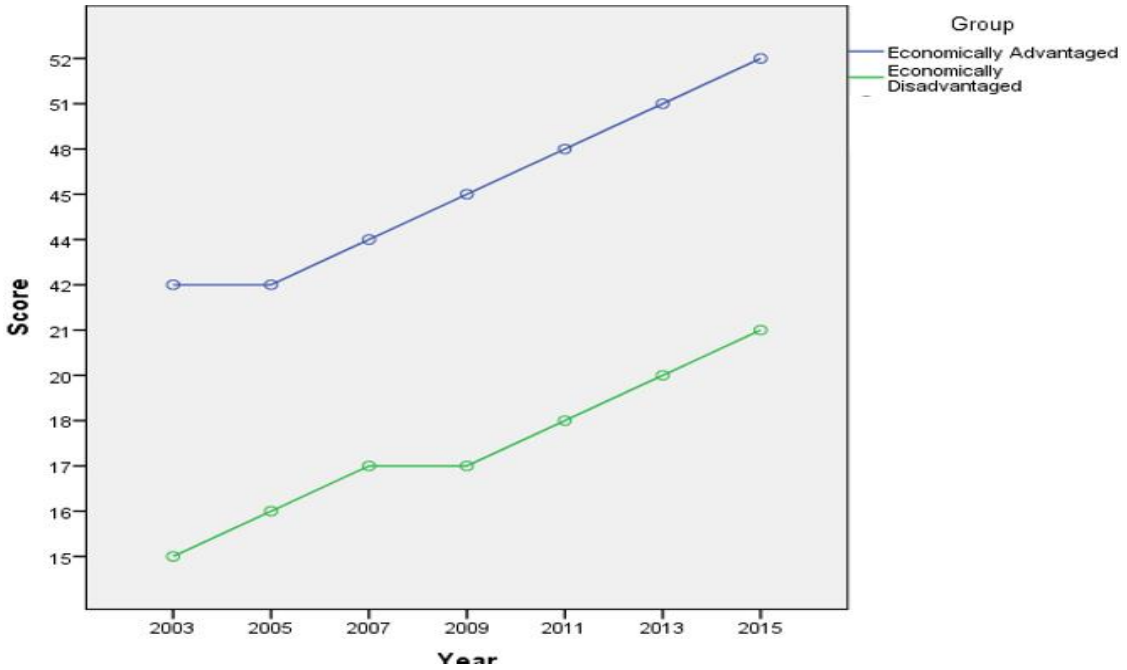

Figure 2. NAEP Trends Economic Comparisons

Are These Groups Represented?

I will use this next section to evaluate some of the existing literature on non-proficient readers and motivation for reading to determine if marginalized minority students such as African American, Hispanic, and Economically Disadvantaged students were adequately represented. Although NCLB provides a direct focus on several marginalized groups, for purposes of this study, I will place emphasis on the representation of Ethnic Minorities and Economically Disadvantage students as these groups have shown historically wide achievement gaps with their counterparts (see NAEP graphs above).

Buly and Valencia's (2002) work has served as a guide for many later research studies using reading profiles to understand non-proficient students. Neither of their publications adequately identified those characteristics of their students to determine if they included the previously stated populations. The sample was taken from one school district from the northwestern part of the U.S. with 57% of the students Caucasian and 43% noted as students of color. From this 43%, 11% were Hispanic and 11% were African-American. Last, 47% of the students were considered economically disadvantaged. While this study has great implications for research and practice, it described the district's characteristics and not the sample's.

Leach, Scarborough, and Rescorla (2003) used eight literacy measures of students' word recognition including fluency, vocabulary, and comprehension abilities for 3rd, 4th, and 5th grade students (n=161) with reading difficulties. The researchers split students into groups with high and low combinations of word recognition and

comprehension performance to identify four profiles representing the patterns of these students. While their study had a unique sample in the inclusion of students with exceptional needs, their study did not adequately address other marginalized groups. Of the 161 students representing 12 elementary schools, only half of the schools had less than 9% of economically disadvantaged students. The other half ranged from 12 to 60% of students from economically disadvantaged households. Of the sample, 95% of the students were Caucasian, and the remaining percentage was a mix of African American, Asian, and Hispanic. When looking at marginalized groups identified from NCLB, the study did address students with special needs; however, it did not adequately represent the patterns of performance for students who are minorities nor those who are economically disadvantaged.

Pierce, Katzir, Wolf, and Noam (2007) evaluated urban 2nd and 3rd grade students who scored more than two-thirds of a standard deviation below the mean on one of the subtests and/or composites of the Test of Word Reading Efficiency (TOWRE) assessment. They used factor analysis and a high/low split of scores to form their four profiles. The 140 students in their study were from five schools between Phoenix and Boston. The sample was composed of 60% Hispanic and 12% African American students. There is not an adequate representation for African American students. Additionally, while researchers described the income levels of students by sharing the percentage of mothers and fathers who earned less than $35,000 a year, it was not linked to its specific populations. To interpret poverty level, readers would need to know the family size as well as specific amount of money each parent earns, therefore this

information will not be considered to adequately represent the economically disadvantaged NCLB group.

Leseaux and Kieffer (2010) identified the literacy profiles of students in 6th grade who were language minorities and native English speakers in a low-income urban setting. Their sample of 262 represented students from five middle schools and one elementary school where 201 were language minority students (English as a Second Language) and 61 were native English speakers. The six schools had low-income populations ranging from 44% to 100%, and 10% of the sample had special education designations. When thinking about marginalized groups, this study adequately addresses the English Language Learners (ELLs) population; however, we are unaware of the numbers of ethnic groups. The inclusion of students from economically disadvantaged populations was difficult to infer because it is not specifically identified.

Dennis (2013) evaluated 6th, 7th, and 8th grade non-proficient students who failed the state reading assessments the previous school year. The sample for the study included 94 middle school students from four middle schools. Of those 94, 56% were Caucasian, 36% were African American, and 7% Hispanic. The percentage of students from economically disadvantaged households was 82% with 36% receiving special education services and 10% being classified as English learners. The representation of African American students was marginal, which did not provide adequate representation to understand the reading constructs present within the group. The sample does adequately represent students from economically disadvantaged groups. With 82%

represented, these findings do have some generalizability to other students from economically disadvantaged groups.

Meyer et al. (2013) evaluated 5th and 6th grade students who were identified as non-proficient on a mandated end-of-grade standardized reading tests. The sample was barely described in detail in that 65 students were from a rural, small school system with a total of 1,800 K-12 students. No information related to ethnicity or socio-economic status was included.

The motivation studies did not provide adequate descriptions of the sample. Baker and Wigfield (1999) included a sample of 371 students from five schools from a large mid-Atlantic U.S. city. They did not have ethnicity and income level information for 75 students due to a school removing itself prior to the final data collection. For the sample information known, 52% were Caucasian, 46% were African American, and 54% were economically disadvantaged. Additionally, they did not explain the percentage of economically disadvantaged within the sample. Guthrie, Coddington, and Wigfield (2009) included 245 5th grade students from three schools in a mid-Atlantic state. The sample was 76% Caucasian, 24% African American, and 10% received special education services. No information was reported to describe the income status of the participants. Wigfield and Guthrie (1997) sample was 70% Caucasian and 30% African American students and the income status was not reported.

While each of these studies added pertinent information to the literature in their respective areas, do they adequately represent the marginalized groups who have been identified as non-proficient students? The answer is somewhat. There were positive and

negative implications from existing literature. First, the studies have some adequate representation of students from some marginalized groups, including special needs, Hispanic students, ELLs and economically disadvantage students. While these groups were represented, they were inconsistent in their representation. Second, within several studies, there was a failure to identify the specific sample or to make a general reference to the population. This limits knowledge of who the actual sample included. Next, with the exception of one study, the others all included samples representative of three or more schools (with some of these schools not having high percentages of minority or economically disadvantaged populations). The schools included lacked a high minority or low-income population. Last, with all of the studies, there was not an adequate representation of African American students.

Recommendations

While these studies supported the notion of non-proficient students in reading demonstrating variability in their motivational profiles, there are several caveats regarding what needs to be accomplished in order to more accurately identify the underlying dimensions of non-proficient readers' motivational profiles. The following recommendations are related to identification of these inclusive profiles.

First, based on its use in existing research studies, the MRQ is the best measure to use when assessing the motivational profiles of non-proficient elementary grade students. With the complexity of motivation, it needs to be assessed with instruments that are specific to the content area of reading and age/grade appropriate. The MRQ encompasses a holistic representation of a student's motivational dimensions for reading through its

comprehensive measures. With the strong prevalence of the MRQ for developing an understanding of students' motivation for reading, it can serve as the foundation for understanding the motivational components of non-proficient students.

Other researchers (e.g., Chapman & Tunmer, 1995; Gambrell, Palmer, Codling, & Mazzoni, 1996; McKenna, M.C., Kear, D.J., & Ellsworth, R. A., 1995) developed similar instruments to assess motivational constructs. Each of these instruments has smaller subset scales that are directly related to those of Wigfield and Baker (1997). The MRQ has been utilized in research on reading motivation with students in upper elementary grades and early adolescent age to examine and determine the dimensions that exist for children's motivations for reading. With the inclusion of these areas, it is the most relevant to use with developing a better understanding of students reading values, beliefs, and behaviors in grades 3-5.

Second, similar to reading profile research, what is important is not the number of profiles but the underlying structures of constructs. There is a need to include all the items on the MRQ to allow underlying motivational dimensions to be revealed through the appropriate methodology. Therefore, I believe a confirmatory factor analysis should be used with the MRQ and exploratory factor analysis with reading assessments, similar to what has been done by previous researchers. Using factor analysis, Wigfield and Guthrie (1997) confirmed the existence of their suggested 11 motivation for reading domains with their instrument; while Buly and Valencia (2002) and Dennis (2013) identified underlying constructs of meaning, fluency, and decoding. While previous researchers identified these constructs and dimensions, are they consistent across multiple

samples? Watkins and Coffey (2004) found that there is variability within the way the motivational constructs are represented in students. Along these lines, the same variability could exist for the reading factors.

Third, a specific recommendation based on existing motivational profiles is that profiles be examined that specifically reflect the motivational values of non-proficient students. The existing profiles focus on ethnic or economic basis groups without a focus on non-proficient students as a special group. Future research should identify students who are non-proficient with a goal of understanding the relationship between their motivation and literacy profiles.

Fourth, in future studies, certain elements should be included related to non-proficient students. These elements include addressing students from economically disadvantaged homes, placing an emphasis on ethnic minorities. The current studies seek to identify causes of disparities for non-proficient students, but in truly addressing the demands of NCLB and other accountability legislation, there should be inclusion of students from economically disadvantaged homes, placing an emphasis on ethnic minority students, and including students, who are from schools with high percentages of economically disadvantaged students. The achievement gap is impacted by school experiences and research findings (Burchinal et al., 2011); therefore, researchers must include students from these specific marginalized populations with historic achievement gaps.

The final recommendation is to link motivation with reading. Without this connection, educators will not understand how these two important areas are linked. A

fuller understanding of this connection will help educators to differentiate their instruction.

CHAPTER III

METHODOLOGY

Research Design

The goal of the study was to identify reading and motivational profiles of non-proficient marginalized students in zipcode schools, where schools within geographical areas tend to represent a specific socio-economic status and ethnic makeup. With this goal, I planned to discover different patterns of reading and motivation for reading of this sample of students. The research questions suggested a quantitative study using several multivariate analysis techniques to generate and analyze the reading and motivational profiles of non-proficient students across the upper elementary grades. The research questions that guided this study were as follows:

1. What trends of reading and motivation for reading are represented in 3rd, 4th and 5th grade non-proficient students?
2. What underlying motivational and reading constructs represent non-proficient 3rd, 4th and 5th grade students?
3. What are the reading profiles of 3rd, 4th and 5th grade non-proficient students?
4. What are the motivation profiles of 3rd, 4th and 5th grade non-proficient students?
5. What are the reading and motivation profiles of 3rd, 4th and 5th grade non-proficient students?

6. What do these profiles tell us about the instructional needs of 3rd, 4th and 5th grade non-proficient students?

Participants

The results of accountability legislation continue to directly impact students in "zipcode" schools with large numbers of marginalized students who are living in poverty and considered ethnic minorities (Gaddis & Lauen, 2014; Hursh, 2007; Jackson, Johnson, & Persico, 2010). While these groups should be the focus of much research with reading profiles, analysis of previous research demonstrated a lack of adequate representation of these groups. As such, these schools and these students must be represented in research to show the patterns that represent their reading and motivations for reading. Therefore, my sample for this dissertation was purposefully representative of several of these populations. For purposes of this study, non-proficient 3rd, 4th, and 5th grade students are described as those who received a score of level 1 or 2 (out of 5) on the English Language Arts End of Grade assessment for the previous academic year.

After university and district approval, contact was made with the principal and administrative team of the identified schools. To follow FERPA and district regulations, the schools were provided with recruitment letters and permission forms to share with students who were eligible for the study (Scoring level 1 or 2 on the English Language Arts End of Grade assessment). School administration determined eligible students based on the non-proficient criteria and shared the forms with parents of those students as part of the recruitment process. Upon return of the permission slips, students began participation in the study.

The students were assessed by the author and his doctoral supervisor. Students were assessed during times designated by the administration that limited distractions from instructional time, including their intervention/enrichment and specials/enhancements times. All measures were administered to students in three to four sessions. During session one, students signed the assent form, then completed the CTOPP, QRI word list, and the PPVT assessments. In the second assessment, students completed the Narrative and Expository QRI's. In the third session, in a group session, I administered the Motivation for Reading Questionnaire to students. The maximum time for assessment completion was two hours with data collection occurring between January and March, 2017.

The research study was conducted in schools in two neighboring school districts in North Carolina. Three schools were selected for participation to acquire as many participants as possible that fit the desired criteria of "zipcode" schools and a high percentage of minority and low socioeconomic status populations. The schools are within a close proximity to each other. All students in each school received free or reduce breakfast and lunch. One school was selected from District A and two from District B. District A is a large school district that includes 40.62% Black/African-American, 33.4% Caucasian, 15.2% Hispanic, 6.3% Asian, and 4.5% other race/ethnicity. District B is smaller with 62.5% White, 20.2% Black/African-American, 11.4% Hispanic, and 5.9% other race/ethnicity.

Demographic data summarizing the study were generated using SAS software (SAS Institute, 2013). In District A, *School 1* had a student population of 569 students---

67% Black, 17% Hispanic, 12% white and 4% other, with all students receiving free lunch. The sample is representative of the overall school population with the majority of the students identified as Black (81%), with the remaining 19% being made up equally (6.3%) of White, Hispanic, and Multi-racial/Other students. The sample contained an unequal ratio of male (40.6%) to female (59.4%) students. When examining the grade and age frequencies, almost half of the sample consisted of third graders (46.9%) with fourth (31.3%) and fifth grades (21.9%) representing the rest of the sample.

In District B, the superintendent selected two of the districts lower performing schools that were both in close proximity to each other and also included high percentages of minority non-proficient students. *School 2* has a student population of 540 students---39.3% White, 31.5% Hispanic, 22.5% Black/African-American, and 6.7% Multi-racial/Other, with all students receiving free lunch. The sample is similar to that of the overall school population, the majority of the students (68.9%) identified as Hispanic (36.4%) or White (32.5%) with the remaining 31.1% being similar with Multi-racial/Other (16.9%) and African-American/Black (14.3%). The sample contained an unequal ratio of male (50.6%) to female (49.4%) students.

School 3 has a student population of 417 students--57.1% Black/African American, 11.3% Hispanic, 22.3% White, and 9.3% Multi-racial/Other, with all students receiving free lunch. The sample is representative of the school population with the majority of the students identified as Black (63%), with the remaining 37% being made up of two of the other major ethnic group: White (28.3%) and Hispanic (8.7%). The sample contained an unequal ratio of male (39.1%) to female (60.9%) students.

The combined sample included 187 non-proficient readers. The majority of the sample were considered ethnic minorities (77.5%). Approximately half of the sample were African-American/Black students (49.2%). The remaining half consisted of the other three groups: White (22.5%), Hispanic (19.3%) and Other (9.1%). The sample contained an unequal ratio of male (44.4%) to female (55.6%) students.

When examining the grade frequencies, almost half of the sample consisted of third graders (44.4%), with fourth (28.9%) and fifth grades (26.7%), almost equally representing the rest of the sample. The frequencies demonstrated the uniqueness and importance of the sample in comparison to samples used within existing studies in that this population primarily includes students of color from families with minimal economic resources. A sample of this type is valuable as it is absent from existing research.

Measures

Reading is a complex process. Acknowledging this complexity, researchers have assessed a variety of reading components, using a variety of assessments, to better understand the patterns of students' reading performance. With the need to focus on non-proficient students, specifically ethnic and economic minorities, it is my belief that assessments should be reflective of the five components of reading, as identified by the National Reading Panel (NICHD, 2000). Each of these components is interrelated, thereby raising the possibility of students being strong or weak in one or more areas. While researchers have criticized the Panel for its procedures and subsequent policies regarding literacy instruction (Allington, 2009), there is general agreement amongst literacy researchers as to their importance with promoting reading development. They

include: (a) phonemic awareness, (b) phonics, (c) fluency, (d) vocabulary, and (e) comprehension. Each component is described below (Learning Point Associates, 2004).

As identified in Chapter 2, only the work of Buly and Valencia (2002) and Dennis (2013) assessed all five components in the creation of their reading profiles. An analysis of their samples revealed neither of their samples adequately addressed African American students. However, Dennis' sample did include students identified as economically disadvantaged. Therefore, to extend their work, I addressed the missing diversity within the existing samples by including larger numbers of ethnic minority students (>50% of the sample) and those students representing economically disadvantaged backgrounds.

Similar to the analysis of reading work, the existing motivational work fails to adequately address African American and economically disadvantaged groups. In the study by Baker and Wigfield (1999), we are not knowledgeable of the actual true sample with such a large amount of missing demographic information. Although there was some representation of these marginalized groups, it was not an adequate representation.

With the complexity of motivation, it needs to be assessed with instruments that are specific to the content area of reading and age/grade appropriate. The MRQ encompasses a holistic representation of a student's motivational dimensions for reading through its comprehensive measures. With the strong prevalence of the MRQ for developing an understanding of students' motivation for reading, it can serve as the foundation for understanding the motivational components of non-proficient students. Based on its use in existing research studies (Baker & Wigfield, 1999; Guthrie, et al., 2007; Unrau & Schlackman, 2006; Wang & Guthire, 2004), the MRQ is the best measure

to use when assessing the motivational profiles of non-proficient elementary grade students. The MRQ has been utilized in existing motivation research; however, the instrument needs to be used with different samples to determine which of the suggested domains are consistently represented (Yuan, 2005). Although the instrument has theoretical support, the presence of each domain was validated using statistical analysis to determine which were represented with this unique population of students.

In the next sections, I will present information on the suggested instruments to use when collecting data to generate the reading and motivational profiles. A table is included at the end of this section to summarize each area that will be assessed, the assessments used, and the scores generated from the assessments (see Table 2). I will start with summary information on each assessment. This will include an overview of the reading construct(s) assessed by the instrument, how the assessment is administered, and reliability and validity information for the instrument (if available). The assessments will be summarized starting with the lower level reading skills moving to higher levels, then finishing with motivation.

Phonemic Awareness

Phonemic awareness is the ability to recognize, identify, and manipulate sounds in words. The Elision Subtest of the Comprehensive Test of Phonological Processing (CTOPP) was used to measure phonemic awareness as it assesses the advanced levels of the phonemic awareness developmental spectrum. This test required students to isolate or remove syllables or phonemes within 20 spoken words (Wagner, Torgeson & Rashotte, 1999). Although traditionally administered to student's ages 5 and 6, the

Elision subtests have a form for older students allowing it to be administered to ages 7-24. Test Reliabilities for the assessment range from .74 to .97 for the subtests with internal consistency coefficients for all composites of the assessment were all .85 and above.

Comprehension

The Qualitative Reading Inventory-4 *(*QRI) (Leslie & Caldwell, 2006) is a commercial informal reading inventory that determines narrative and expository reading levels for students. The QRI-4 can be used for multiple purposes. For this study, it was used to assess fluency (reading text with sufficient speed to support comprehension), as a measure of students' rate in word identification (word list and accuracy), and as a measure of comprehension (ability to make meaning from the text read). The fluency and accuracy data were used to determine proficiency for each grade level text read, therefore; for a student to achieve a grade level, they must have had sufficient accuracy and fluency on that level text. For this dissertation, only the word list grade equivalent scores and the highest instructional comprehension level grade equivalent scores for expository and narrative texts were reported and analyzed.

The appropriate starting level for narrative text was determined by having students read aloud word lists representing grade level words until they are no longer able to read with at least 90% accuracy on the list. For expository text, based on pilot study data collection, the assessors used their judgment based on the narrative text to start at the narrative finishing level or one level below. For each text read, the assessor determined the prior knowledge of the student for the text topic by asking the concept questions

followed by the student reading aloud predetermined narrative and expository passages. All reading errors and times for reading were recorded to determine accuracy and rate. The rate was not included in this study as this measure does not identify unique information about students' actual accuracy and rate independent of the text read. Upon completion of oral reading, the student was asked a series of explicit (clearly stated in the text) and implicit (implied or suggested, but not specifically stated in the text) questions. The students read passages until the highest instructional reading level was determined for each student with a minimum of 90% accuracy and 70-85% of the comprehension questions answered correctly. Leslie and Caldwell (2006) reported inter-rater reliabilities of .99 for oral reading miscues and .98 for comprehension. For data collection purposes, the passages used span from QRI levels one to six.

Fluency

Fluency is a student's ability to read text with sufficient speed, accuracy and expression to support comprehension. The Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Oral Reading Fluency (DORF) (Good & Kaminski, 2011) assessment was used to measure fluency of grade level text. Although the QRI can be used to measure fluency of instructional level text, there is a specific need to understand student reading fluency of grade level text with the demands of the ELA Common Core State Standards (2010). The DIBELS DORF is a standardized, individually administered test of accuracy and fluency with a set of three passages that are meant to identify children who may need additional instructional support. It is also used to monitor progress of students over time with grade level text. Each assessment measures the number of

correct words and accuracy of a students' reading one minute of grade level text. Student performance is measured by having students read three passages aloud for one minute each followed by the student retelling what was read. Words omitted, substituted, and hesitations of more than three seconds are scored as errors, while self-corrections are scored as accurate. The number of correct words per minute from the passage is the oral reading fluency rate. The DORF assessment is a required assessment for students in grade K-3 as a part of the state assessment framework; however, two of the schools currently administer the assessment to students in grades K-5. School two does not administer the assessment to all students K-5. The researchers administered this assessment to the students.

Good and Kaminski (2002) reported test-retest reliabilities for elementary students ranging from .92 to .97 with alternate-form reliability of different reading passages drawn from the same level ranging from .89 to .94. Criterion related validity has been found in the range of .66-.77 for word correct and .54-.68 for accuracy. This assessment was used to measure phonics (word recognition) and fluency (accuracy) for the participants.

Vocabulary

Vocabulary has been shown to be a predictor of reading comprehension. In order to acquire information on vocabulary knowledge independent of decoding ability, the The Peabody Picture Vocabulary Test-Revised (PPVT) (Dunn & Dunn, 2007) was administered to each student. Buly and Valencia (2002) and Dennis (2013) used this assessment as it measures receptive vocabulary knowledge not dependent upon the

students' decoding abilities. The assessor started the assessment with pictures that represent the students' suggested knowledge based on his/her age. The assessor said a term while the student looked at four pictures and identified the picture that matched the term. The assessor continued to present pictures until the student missed eight items in a section. The PPVT provides a norm scaled score and grade equivalent with a test retest reliability of .77 for standard scores. This assessment was used to measure vocabulary for the participants.

Reading Proficiency

The North Carolina English Language Arts (ELA) READY End-of-Grade Assessments (EOG) is a curriculum-based achievement test administered in grades 3–8. Third grade students participate in a Beginning of Grade (BOG) assessment. Only fourth and fifth grade students have EOG scores to determine proficiency for the study, so BOG scores for third graders were used to determine their proficiency. The ELA/Reading assessments are aligned to the Common Core State Standards (2010). The ELA assessment is administered in a paper-and-pencil format with an initial time allotted of 180 minutes with up to an additional 60 minutes testing time if needed. The reading selections are comprised of narrative and expository selections based on the Common Core State Standards. Knowledge of vocabulary is assessed indirectly through application and understanding of terms within the context of the selection and questions. The EOG assessments of ELA/Reading at grades 3–5 contain 52 total test items, while the BOG contains 44 items. Access to students BOG/EOG scores for this assessment are

not available to researchers per district policies. Because of this, the schools identified candidates for participation with BOG/EOG scores of a level 1 or 2.

Motivation

Motivation is complex and domain specific (Wigfield, Guthrie, Tonks, & Perencevich, 2004), which implies that it can change based on content area and thus will need to be assessed with instruments that are specific to assessing motivation in that content area. The MRQ is a domain-specific instrument used to assess the multidimensionality of reading motivation. In comparison to other motivation instruments, the MRQ addresses multiple dimensions of motivation within the area of reading. It has been used by previous researchers to assess students' motivation and with its ability to measure multiple motivations for reading, (Guthrie, et al., 2007; Unrau & Schlackman, 2006; Wang & Guthire, 2004; & Wigfield & Baker 2009) it was the best option for my dissertation.

The MRQ is a student self-rated assessment of the extent to which each student is motivated to read (Wigfield & Guthrie, 1997). It contains 53 items that each student completes independently within a group of approximately 10-15 students (see Appendix A for MRQ items). The response format ranges from 1= "very different from me" to 4= "a lot like me." Scores are computed for each construct by averaging across each of the respective 11 constructs: *Reading Efficacy, Reading Challenge, Reading Curiosity, Reading Involvement, Importance of Reading, Reading Work Avoidance, Competition in Reading, Recognition for Reading, Reading for Grades, Social Reasons for Reading, and Compliance*. The assessment began with two practice items and then students completed

Table 2

Instruments for Data Collection

Area to be Assessed	Assessment	Scores Used
Phonemic Awareness	• Elision Test: Comprehensive Test of Phonological Processing	• Raw Score
Phonics	• DIBELS (Dynamic Indicators of Basic Early Literacy Skills) DORF Assessment Accuracy Scores	• Standard Score
Vocabulary	• Peabody Picture Vocabulary Test-Revised	• Standard Score • Grade Equivalent
Fluency	• DIBELS (Dynamic Indicators of Basic Early Literacy Skills) DORF	• Standard Score
Comprehension	• Qualitative Reading Inventory-4. (Narrative and Expository)	• Grade Equivalent Scores
Reading Proficiency	• NC Ready EOG	• Scale Scores • Proficiency Levels
Motivation	• Motivation for Reading Questionnaire	• Domain Average Scores

the remainder of the questionnaire on their own while the assessor read each item aloud. Students finished the assessment in one 20-25 minute session. Reliabilities for the instrument have ranged from .52 to .81. This assessment was used to measure the motivational values of this sample.

Data Analysis

The study used the following quantitative methods for generating the profiles of the suggested sample: descriptive statistics (means, standard deviations), factor analysis (exploratory and confirmatory), and cluster analysis (hierarchical and non-hierarchical). The study followed the following steps to generate answers to each of the research questions: 1) identification of descriptive statistics, identification of reading factors (construct), 2) identification of reading clusters, 3) validation/identification of MRQ instrument domains, including adjustments to identify best model and domains for the MRQ, 4) identification of motivation clusters, and 5) identification of reading and motivation clusters (profiles).

Reading Profiles

First, descriptive statistics were run to provide summaries about the sample and the measures used. This included cross tabulations to identify the gender and ethnicity, and grade statistics of the sample (gender, race, grade level). Next, I identified the means and standard deviations for each grade level, as well as the entire sample, to determine if the sample fell below grade level expectations for each reading measure. Last, I used these descriptives to make general conclusions about the sample prior to subsequent analyses.

Next, an exploratory factor analysis was run for the reading data (Word list, CTOPP, PPVT standardized scores, QRI Narrative and Expository, and DIBELS correct words per minute and accuracy scores) using SAS software (SAS Institute, 2011). Exploratory factor analysis is a data reduction technique that explains correlations through unknown, unobserved (summary variables) factors (Timm, 2002). This process identified factors, or unobserved variables, that produced the measured variables. Although existing research (including my pilot study) have determined factors, the exploratory factor analysis was used to determine if there are consistent underlying factors that are represented within this sample from previous work.

Several steps were completed to accurately determine the factors representing the data. The first step was to determine the number of factors to retain. When doing this step, multiple methods were used to ensure the best selection (Henson & Roberts, 2006), including the Kaiser criterion, % of variance explained, and SCREE test. The Kaiser method determined the number of factors by retaining all factors with eigenvalues above 1 (Costello & Osborne, 2005). For the percentage of variance explained method, the researcher examined the variance explained by each variable and identified an acceptable percentage. For this study, the acceptable level was percentage explaining above 65% of the variance of the data. In the SCREE test method, the researcher visually examined the scree plots graphical representation of the eigenvalues and identified the area where there was an elbow, or sudden drop (Cattell, 1966). After determining the factors that represented the data, the communalities were examined. This process examined the variance of each item that is accounted for by the factors. The higher the value of the

communality for a variable, the more of its variance was explained by the factors, with the goal to explain as much variance as possible. Communalities are the sum of the squared factor loadings for all the factors. When examining the communalities extractions, those greater than .60 are acceptable, as this criterion signifies that more than half the variance for that item is explained by the factor. If there are variables with less than 60% of the variance explained, these variables were deleted from the analysis.

Next, I examined the factor loadings using a Varimax rotation because it maximized the variance of the loadings for each factor and provided the most interpretable matrix (Kaiser, 1958). After determining if there were clear and interpretable loadings for each variable on a factor, I named the underlying reading constructs that represented this sample. Then, I saved the factors as variables to be used to understand the profiles of this group of students within the subsequent cluster analysis.

The factor scores representing the reading measures were then used within a cluster analysis to generate the reading profiles of non-proficient students. Cluster analysis is a technique that partitions a set of observations/variables into a distinct number of unknown groups in a manner that all observations within a group are similar, while observations in different groups are dissimilar (Timm, 2002). It has been suggested that when true numbers of clusters are unknown a priori, like in the current study, to use a combination of hierarchical and non-hierarchical clustering techniques to formulate groups (Sharma, 1996).

Multiple hierarchical methods were used to identify the number of clusters and cluster membership (profiles). First, I completed the hierarchical cluster analysis using

average, complete, single, and ward linkage to group the variables. In doing cluster analysis, it is vital to investigate the groups using multiple grouping measures. Then, dendograms (icicle plots) were examined to determine the number of profiles present with each grouping method. This process involved examining clusters joined to visually decide where the largest distance between groups occurs and to stop joining groups at that point (Rencher & Christensen, 2012). Next, the cluster history was examined to identify the best cluster solution which had the largest distance between clusters while keeping the smallest root-mean-square standard deviation (RMSSTD) and Semi-partial R-Squared values and the highest R-squared values (Rencher & Christensen, 2012), measures used to determine the homogeneity within the clusters. This procedure required the researcher to examine each line of the cluster history table, comparing values of the line to those before and after to determine where the largest "jumps" occur and use the cluster solution above this. From these two procedures, the amount of clusters were chosen that best represented the data. After the number of clusters were determined from the Hierarchical Cluster method, the cluster memberships were refined using non-hierarchical k-means clustering (Timm, 2002). The means from the hierarchical clusters were generated in the previous method and were used as initial seeds to refine group membership for the clusters in the non-hierarchical methods. From this process, the group membership was defined for each cluster. I then used this information to generate descriptive statistics of each profile to analyze the patterns present for these non-proficient students.

Motivation Profiles

The MRQ has theoretical support for its structure (Baker & Wigfield, 1999; Wigfield & Guthrie, 1997). Although the factor structure has a theoretical basis established by the authors, my desired sample of students differed from the initial sample. Because of this, prior to using this instrument to understand the motivation for reading of these students, it was vital to confirm/identify the factor structure represented in this sample (Yuan, 2005). First, I used LISREL 9.2 software to determine if the structure of the MRQ is a fit for my data set. This step was important because the researcher needs to be confident of the applicability of these motivation items to this sample. Goodness of fit indices/statistics were used in the CFA to determine how well the MRQ's a priori model fits these data (McDonald & Ho, 2002). In using CFA, I determined if the model was a good, marginal, or Poor fit for the data set (Kline, 2010) and if a Poor or marginal fit, made modifications to make this a good fit. There are many indices produced in structural equation modeling, but only certain indices were interpreted. There are no required indices to be included in decision making for structural models; however, it is necessary to report a variety of indices to capture different parts of the model fit and make reasonable determinations (Crowley & Fan, 1997). Kline (2010) suggests inclusion of the Chi-square indices, root mean square error of approximation (RSMEA), the standardized root mean square residual (SRMR), and comparative fit index (CFI) to make decisions about structural model fit. To analyze structural models for this data set, those indices were used for interpretation of model fit. The Chi-square value is a traditionally utilized fit index to evaluate a model's fit. With this index, a good fit generated an

insignificant finding < .05 (Kline, 2010). The root mean square error of approximation (RMSEA) explained how well the model with estimates fit the covariance matrix of the sample. For this index, good fit values ranged from .05-.08 (Steiger, 2007). The RMSEA also produced lower (LB) and upper bound (UB) limits. The upper bound limit was included and this should be preferably less than .08 for a good fit. The standardized root mean square residual (SRMR) was used since the questionnaire assesses consistent levels i.e. 1-4 (Kline, 2010). Good fit values for SRMR were less than 0.08 (Hu & Bentler, 1999). The comparative fit index (CFI) assessed the model fit. Values larger than .90 are acceptable with a requirement of larger than .95 for a good fit (Hu & Bentler, 1999).

After identifying items and factors that are represented in my sample, I named the factors. Next, I generated and discussed descriptive statistics representing the means of individual items and the means of the factors. These descriptives were used to make general conclusions about this sample of non-proficient readers' motivation for reading prior to subsequent analyses. I then completed the same cluster analysis process with the motivation average scores for each factor. This allowed me to generate profiles that can be compared to the existing work of Baker and Wigfield (1999).

Reading and Motivation Profiles

Last, I used the reading factor scores and the motivation factor scores to generate profiles that represented the reading and motivation patterns of these non-proficient students. These profiles were generated with the same procedures as done for the reading and motivation profiles in isolation. These profiles were generated as interpretations of

the reading profiles as reading and motivational factors clustered together. These new profiles were analyzed with mean scores and other descriptive statistics that represent the factors to determine the patterns that exist with these students from multiple analyses. An analysis was also completed to compare differences between the single and combined profiles.

CHAPTER IV

RESULTS

This study focused on understanding the reading and motivation profiles for students, who were not successful on their state mandated reading assessment. This included identifying underlying reading and motivational constructs and the multidimensionality of these constructs. The data collected measured students' skills in reading by assessing the five major areas of reading: phonemic awareness, phonics (word recognition), fluency, vocabulary and comprehension; and motivations for reading: including efficacy, challenge, avoidance, curiosity, involvement, importance, recognition, grades, competition, social, and compliance. The instruments used to collect the data were discussed in the previous chapter.

I first discuss the reading descriptive data by analyzing each school, by grade level, and the entire sample. This is followed by the results of the exploratory factor analysis and cluster analysis. Then, I discuss the motivation descriptive data. This is followed by results from a confirmatory factor analysis and cluster analysis of the motivation data. Last, I present the results from the combined cluster analysis, representing data from both the motivation and reading clusters. I have structured the results analysis this way because previous studies have not examined profiles from a

combination of reading motivation, but in isolation. This organization of the results presents initial results that can be evaluated to determine if the existing profiles and patterns are consistent with my sample.

Reading Trends

In this section, I present descriptive information by grade and school level for each of the reading variables assessed. This data was generated by grouping data based on grade levels and schools to identify mean scores that could be used to examine patterns present. A multivariate ANOVA (MANOVA) was conducted with the reading variables to determine if significant differences existed between the school level data.

Table 3 presents descriptive information (means, standard deviation, and skew) of student performance across the schools for the seven reading variables. From the seven variables, all appear to be within a normal range except DIBELS accuracy scores which are negatively skewed. With this minor lack of normality which can be attributed to the nature of a population inclusive of only non-proficient students, the data is acceptable to future analyses.

When examining Table 3, four general patterns appeared. First, as expected, given the non-proficient status of the students, performances overall were below grade level expectations. For each variable, there were grade level expectations that were not met within the sample for grades 3, 4, and 5 respectively, *DIBELS* expected accuracy 96%, 97%, & 98%; *DIBELS* correct words per minute 86, 103, and 112; QRI scores for comprehension and the word list should be greater than or equal to the grade level. Second, schools had different patterns of high and low scores in comparison to each

other. Of the seven variables assessed, School 3 had four variables with the highest scores (QRI-Word list, DIBELS WPM, and QRI-narrative and expository). The other two schools had fewer variables with the highest scores. School 1 had two with the highest scores (CTOPP and PPVT) and School 2 had one (DIBELS Accuracy). Third, with exception of CTOPP and DIBELS accuracy, School 2 had the smallest standard deviations of most of the variables assessed. All though this school had the most students in the sample, it provided the smallest spread of data. Last, each school had consistent differences between QRI expository and narrative text comprehension. The expository comprehension levels were approximately one grade level lower than their narrative scores. This difference suggests these students were not comprehending expository texts at the same grade level as they were narrative texts.

Table 3

Descriptive Statistics for the Reading Data by School

Variable	*School 1 n=64*	*School 2 n=77*	*School 3 n=46*	*Average of Scores n=187*	*Skew*
Phonemic Awareness					
CTOPP*	14.77	9.94	11.61	12.50	.01
	5.06	*4.35*	*4.14*	*4.99*	
Phonics/Word ID					
DIBELS ACC ***	93.86	96.09	95.80	95.07	-5.18
	11.55	*6.08*	*5.16*	*8.58*	
QRI Word List ****	3.04	3.33	3.75	3.35	.13
	1.65	*1.41*	*1.52*	*1.57*	
Vocabulary					
PPVT GE****	3.08	2.74	3.05	2.99	1.10
	1.67	*1.58*	*1.61*	*1.63*	
Fluency					
DIBELS	82.49	86.54	95.08	87.80	.02
	37.34	*29.71*	*37.27*	*35.83*	
Comprehension					
QRI E ****	1.83	1.59	1.98	1.82	1.25
	1.06	*.79*	*.98*	*.97*	
QRI N ****	2.70	2.72	2.88	2.77	.41
	1.16	*.98*	*1.19*	*1.13*	

Note**:** E=Expository Text, N=Narrative Text, *Raw Score, ***Percent Correct, ****Grade Equivalent, number in italics is the standard deviation

1. **Phonemic Awareness:** The raw scores for CTOPP range from 1-20 with average scores falling between 8 and 12.
2. **Phonics/Word Identification**: Percent correct, *DIBELS* expected accuracy 96%, 97%, and 98% for grades 3, 4 & 5 respectively. *QRI* word list expectation is to be able to successfully read grade level word list.
3. **Vocabulary:** PPVT GE expectation is to identify vocabulary at grade level.
4. **Fluency Scores**: Correct Words read per Minute Expected scores for *DIBELS* are 86, 103, and 112 for grades 3, 4 & 5 respectively.
5. **Comprehension:** For the QRI all scores representative of the highest instructional level text read by grade level equivalents for the passages.

In addition to the patterns and differences observed in the reading data, a MANOVA was completed to determine if there were significant differences for the seven variables between the three schools. Table 4 provides the results of the MANOVA test. There was evidence of a significant difference between schools for at least one of the reading variables $F(14, 346) = 5.26$, $p < .0001$. As a result of the MANOVA results, the univariate ANOVA tests were completed to determine which variables were significantly different between schools. When examining the univariate tests, significant differences were noted for the word list $F(2, 184) = 3.68$, $p < .0271$ and the CTOPP $F(2, 184) = 17.76$, $p < .0001$. A post hoc test was completed using the Tukey HSD test to determine which means were different between the schools for the CTOPP and Word List variables (see Table 5). For the word list variable, a significant difference was found between School 1 and School 3 (p=.02). There were no significant differences between School 1 and School 2 (p=.58), nor between School 2 and School 3 (p=.34). For the CTOPP variable, significant differences were found between School 1 and School 2 (p=.00), and School 1 and School 3 (p=.00). No significant difference was found between School 2 and School 3 (p=.15). These results showed that School 1 is higher than School 2 and 3 for the CTOPP; while for the Word list, School 1 is lower than School 3.

Table 4

MANOVA Test Results for Reading Differences Between Schools

Statistic	Value	F Value	Num DF	Den DF
Wilks' Lambda	.69	5.26*	14	356
Pillai's Trace	.33	4.96*	14	358
Hotelling-Lawley Trace	.44	5.57*	14	281
Roy's Greatest Root	.40	10.19*	7	179

Note: *= p<.05. F. Dependent Variable=School, Independent Variable(s) = Reading Assessments.

Table 5

Post Hoc Test Comparison Between Schools

Dependent Variable	School	School	Mean Difference	Std. Error
Word List	1	2	-.29	.29
	1	3	-.71*	.26
	2	3	-.42	.30
CTOPP	1	2	4.83*	.86
	1	3	3.16*	.78
	2	3	-1.68	.89

Note: TUKEY HSD used for comparisons. *=p<.05.

Table 6

Descriptive Statistics for the Reading Data by Grade Level

Variable	*3rd n=83*	*4th n=54*	*5th n=50*	*Average of Scores n=187*
Phonemic Awareness				
CTOPP*	11.76	12.26	13.98	12.50
	4.95	*5.07*	*4.74*	*4.99*
Phonics/Word ID				
DIBELS ACC ***	94.25	94.17	97.40	95.07
	7.61	*12.21*	*3.66*	*8.58*
QRI Word List ****	2.89	3.28	4.20	3.35
	1.42	*1.55*	*1.53*	*1.57*
Vocabulary				
PPVT GE****	2.54	2.82	3.90	2.99
	1.28	*1.66*	*1.76*	*1.63*
Fluency				
DIBELS	76.84	86.93	106.92	87.80
	34.50	*33.94*	*32.54*	*35.83*
Comprehension				
QRI E ****	1.45	1.89	2.38	1.82
	.69	*.77*	*1.26*	*.97*
QRI N ****	2.31	2.70	3.58	2.77
	.91	*.94*	*1.20*	*1.13*

Note**:** Scores combined for grade levels represent all schools. E=Expository Text, N=Narrative Text, *Raw Score, ***Percent Correct, ****Grade Equivalent, number in italics is the standard deviation.

1. **Phonemic Awareness:** The raw scores for CTOPP range from 1-20 with average scores falling between 8 and 12.
2. **Phonics/Word Identification**: Percent correct, *DIBELS* expected accuracy 96%, 97%, and 98% for grades 3, 4 & 5 respectively. *QRI* word list expectation is to be able to successfully read grade level word list.
3. **Vocabulary:** PPVT GE expectation is to identify vocabulary at grade level.
4. **Fluency Scores**: Correct Words read per Minute Expected scores for *DIBELS* are 86, 103, and 112 for grades 3, 4 & 5 respectively.
5. **Comprehension:** For the QRI all scores representative of the highest instructional level text read by grade level equivalents for the passages.

Table 6 presents descriptive information (means and standard deviations) of student performance across grade levels for the seven reading variables. With minimum differences between school level data, and the uneven numbers of students, grade level descriptive statistics were combined across schools and then evaluated. When examining this table, five general patterns were identified. First, as observed in the school comparisons, performances for each grade level were below grade level expectations. For each variable, there were grade level expectations that were not met within the sample or grades 3, 4, and 5 respectively DIBELS expected accuracy 96%, 97%, & 98%; *DIBELS* correct words per minute 86, 103, & 112; QRI scores for comprehension and the word list should be greater than or equal to the grade level. Second, except for DIBELS accuracy scores, as expected, students' performance for the reading scores increased by grade level. Third, students' ability to manipulate sounds of words (CTOPP), read words in isolation (Dibels ACC and QRI Word Lists), and identify single word meanings (PPVT) were closer to grade level than were their ability to read quickly (DIBELS) and comprehend texts, particularly for expository passages. Fourth, students' ability to recognize and decode words were at a higher level than their comprehension levels. The word list scores were all less than a grade level lower than expected based on grade level placements. Last, when examining the comprehension variables, the spread (standard deviation) grew as students increased in grade levels. This shows that the comprehension of non-proficient students widens as students continue to higher grade levels, and this area needs a greater emphasis than word recognition for these students. This finding signifies that all non-proficient students were not the same and variances grow as

students proceed to higher grade levels. A MANOVA was not completed for comparisons between grade levels because the expectation was for differences in performances for each of the variables between grade levels.

In summary, the descriptive data presented in this section highlighted many of the patterns present for the sample. The students were consistently below grade level expectations regardless of the school. Only minimal significant differences were found between mean scores for each school. These initial descriptive patterns provided the introduction to later findings by identifying reading trends represented by these 3rd, 4th and 5th grade non-proficient students. The initial differences suggested patterns of performance for students, but with many individual characteristics to consider. The larger standard deviations provided an initial support for the idea that non-proficient readers were not identical in their needs. For the rest of this chapter, with the exception of the motivation item level descriptive summaries, the schools were combined for analysis. With no major differences and consistent trends in their performance, the data was suitable for combining. A factor analysis determined if these multiple reading characteristics could be reduced to fewer constructs, which were easier to interpret and group. Then, these constructs were used to group students via the clustering process into groups with similar patterns of performance.

Reading Factors

To better understand students' strengths and weaknesses, factors were generated to reduce the data into a smaller subset of interpretable values. This process identified factors, or unobserved variables, that explained a large percentage of the measured

variables. An exploratory factor analysis was performed using SAS software with the 11 variables to identify these unobserved factors.

The first step of the exploratory factor analysis determined the number of factors to retain. When doing this step, multiple criteria were examined to ensure the best selection (Henson & Roberts, 2006). Three methods determined the factors--Kaiser criterion, SCREE test (Cattell, 1966), and percent explained. The Kaiser method determined the number of factors by retaining all factors with eigenvalues above 1 (Costello & Osborne, 2005). In the SCREE test method (see figure 3) the researcher visually examined the scree plots graphical representation of the eigenvalues and identified the area where there is an elbow, or sudden drop (Cattell, 1966). The percentage method explained the number of factors to retain that represent a high percentage of the variance. Using these three methods, a two-factor solution was determined. The scree plot displayed a drop after two factors. While there is only one eigenvalue above 1.0, the second is close with .93 and the two-factor solution explained 72% of the total variance which is acceptable (see Table 7).

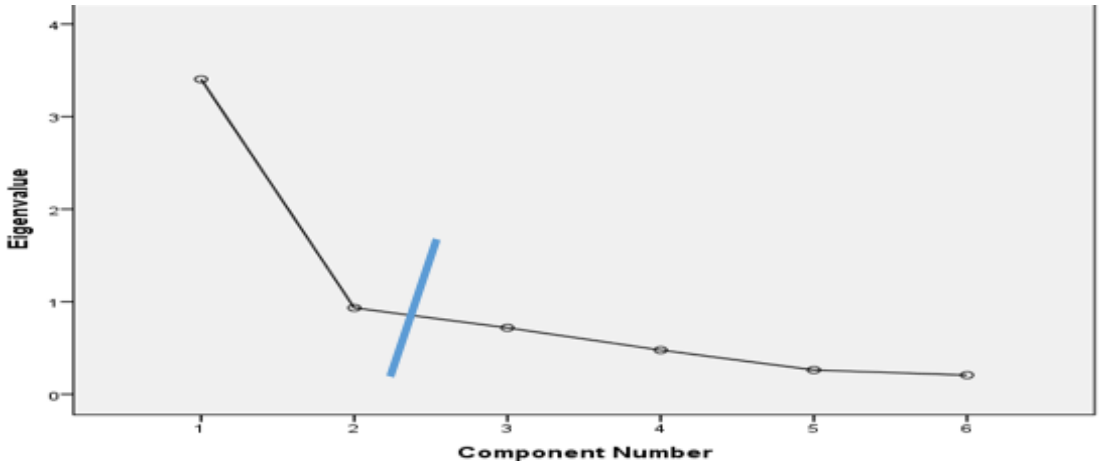

Figure 3. Scree Plot of the Reading Factors

Table 7

Total Variance of Reading Factors

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	3.40	56.73	56.73
2	*.93*	*15.55*	*72.29*
3	.72	11.96	84.25
4	.48	7.95	92.20
5	.26	4.36	96.56
6	.21	3.44	100.00

Next, the communalities were examined. This process examined the variance of each item that was accounted for by the factors. The higher the value of the communality for a variable, the more of its variance is explained by the factors, with the goal to explain as much variance as possible. When examining the communalities extractions, those

greater than .60 were acceptable, as this criterion signifies that more than half the variance for that item was explained by the factors. Variables with less than half of their variance explained by the factors were not accurately measured by the factors. With the initial two-factor model, all loadings were greater than .6, with the exception the CTOPP (Table 8). Similar to the work of Buly and Valencia (2002, 2004), the CTOPP did not have more than half of the variance of the variable explained by the factors and was removed from subsequent analyses. When running the factor analysis again without the CTOPP scores, all extractions were greater than .60 (see Table 8). This supported the two-factor solution for this data set.

Table 8

Reading Factor Communalities

	Initial Extraction	Revised Extraction
Word List	.78	.78
CTOPP	**.33**	**Removed**
PPVT Standard	.73	.68
QRI- Narrative	.64	.69
QRI- Expository	.66	.74
DIBELS WPM	.79	.79
DIBELS Accuracy	.63	.66

Note: BOLD is below 50% of the variance explained by the factor structure.

The next step involved examining the factor matrix to determine if there were unequivocal loadings for each variable on a factor. This step ensured that the two factors are actually interpretable with representation of the variables. For this step, a Varimax rotation (see Table 9) was used to determine which variables loaded onto which factor, because it maximized the variance of the loadings for each factor and provided the most interpretable matrix (Kaiser, 1958). The Varimax rotation produced all acceptable loadings, with the lowest being .60. Next, with interpretable factors, the factors were appropriately named, word recognition and meaning, similar to that of Buly and Valencia (2002, 2004) and Dennis (2013).

Table 9

Reading Variables Factor Loadings

	Component	
	Word Identification	Meaning
Word List	**.81**	.35
PPVT Standard	.00	**.82**
QRI- Narrative	.57	**.60**
QRI- Expository	.42	**.75**
DIBELS WPM	**.85**	.26
DIBELS Accuracy	**.81**	.02

Note: Bold Numbers: Heaviest loadings for each factor. Rotation Method: Varimax with Kaiser Normalization.

Factor 1: Word Identification

Factor one was labeled as word identification, as each of the measures that loaded onto this factor were related to word recognition abilities, including fluency and rate. Each loading was greater than .80 which indicates a higher percentage of this variability explained by the factor. These loadings included DIBELS accuracy scores, CWPM scores, and QRI word list scores. This factor was attributed to 56.73% of the total variance. The items empirically and theoretically fit together on this factor because accuracy and rate are often associated with each other in reading assessments.

Factor 2: Meaning

Factor two was labeled as meaning because each of its measures were inclusive of students' ability to make meaning from knowledge of vocabulary and making meaning from texts read. The QRI measures of comprehension for expository and narrative text as well as the PPVT loaded here. Meaning was attributed to 15.55% of the total variance. Factor loadings for this factor were all above .6, thereby supporting this factor as representing a large amount of variability of each loading. Although the PPVT does not require students to comprehend a text, it loaded highly onto this factor. This assessment is a test of receptive vocabulary and measures students' ability to understand and identify items.

The results of the exploratory factor analysis generated two factors, word recognition and meaning, which represented the underlying reading constructs for this group of students. However, factor analysis does not provide information on patterns of

performance for understanding the similarities and differences present within this group. The next analysis addressed this question.

Reading Profiles

Cluster analysis was performed on the reading factors, word identification and meaning, to generate profiles/clusters that represent non-proficient readers. The cluster analysis is a statistical technique that divided students into similar groups (Timm, 2002). It allowed the researcher to interpret the sample by identifying patterns amongst similar groups of students. It has been suggested that when true numbers of clusters are unknown *a priori*, like in the current study, the researcher should use a combination of hierarchical and non-hierarchical clustering techniques to formulate groups (Sharma, 1996). Both clustering techniques were used in this study.

The SAS program was used to perform hierarchical and non-hierarchical cluster analysis to identify the groups of students with similar patterns. The non-hierarchical cluster analysis was completed to determine the number of clusters, without a specific focus on the group membership. Average, complete, single, centroid, and Ward's linkage methods were used within the analysis to group the data. These methods were used because they provided different ways to group the variables by the nearest neighbor or chaining method (single), furthest neighbor (complete), average distance between clusters (average), all possible cluster pairs combined and summed (Ward's), and the mean value for each variable is calculated and used for clustering (centroid). The use of these methods also helped to establish consistency when determining the number of clusters present.

First, dendograms and cluster group history were examined using average, complete, single, centroid, and Ward's linkage methods to determine the number of clusters. The dendograms were examined to visually determine the number of groups by identifying the groups with the smallest distance between them. This process involved examining clusters joined to visually determine where the largest distance between clusters occurs. This method provided less consistent results than desired. Single linkage methods were uninterpretable visually due to the large sample size. The average and centroid methods visually displayed five groups, while the ward and complete methods displayed four groups.

Next, the cluster histories were examined to identify a solution which would have the largest distance between clusters while keeping the smallest RMSSTD and Semi-partial R-Squared values and the highest R-squared values. This procedure required the researcher to examine each line of the cluster history table (see Table 10), comparing the values to those of the line before and after to determine where the largest "jumps" occured. Then, the cluster solution above this one was selected. I reported the average method, as this was the method used to perform the hierarchical step of the clustering procedure. For this method, the largest jumps occurred between lines three and four for the RMSSD, Semipartial R-squared, and R-Square values, while allowing for the smallest RMSSD and Semipartial R-squared values and the largest R-Square values. As a result, a four-cluster solution was selected as the best representation for the data.

With a number of clusters selected, I completed hierarchical clustering of the data. This step refined group memberships to determine the exact number of students in each

group. The initial seeds (mean scores) from the non-hierarchical stage were used as seeds to sort students into groups based on those means. This process ensured students in each group were more similar to students in the same group and not as similar to other groups.

Table 10

Reading Cluster History

Number of Clusters	Clusters Joined		n	New Cluster RMS Std Dev	Semipartial R-Square	R-Square	Maximum Distance
10	CL22	CL23	21	.41	.01	.83	1.22
9	CL15	CL14	45	.46	.02	.82	1.25
8	CL17	CL12	86	.55	.05	.77	1.38
7	CL10	CL16	31	.56	.03	.74	1.42
6	CL9	CL8	131	.64	.10	.64	1.52
5	CL7	CL41	33	.61	.01	.63	1.73
4	CL6	OB69	132	.65	.01	.62	2.19
3	CL4	CL11	153	.82	.23	.39	2.42
2	CL5	CL3	186	.96	.32	.08	2.52
1	CL2	OB38	187	1.00	.08	0.00	5.48

Note: Complete Clustering Method Used. Only possible clusters less than 10 were included to save space. Shaded line identifies greatest "jumps" and the best cluster.

Table 11

Reading Clusters Summary Data

Cluster	n	Maximum Distance from Seed to Observation	Distance Between Cluster Centroids	Cluster Means	
				WordID	Meaning
1	49	2.21	1.44	.45	1.25
2	35	4.03	2.02	-1.58	.06
3	52	1.75	.97	.53	-.18
4	51	1.50	.97	.11	-1.06

The revised groups contained students who were distinct from the other clusters, as shown by the maximum distance from seed to observation, and the distance between cluster centroid columns of the cluster summary table above (see Table 11). Several patterns emerged from the clusters, as noted in the cluster summary, with most of the clusters having patterns of high and low scores with word identification and meaning. While examining these patterns, they must be interpreted within the context of these students still performing below grade level expectations.

Cluster one featured 49 students who appeared as most successful with both word identification and meaning as each of these scores are above the median. These students had the highest meaning scores of the sample. While their word identification scores were not the highest, they were still high based on a within group comparison. The smallest cluster membership was for the students in cluster two. These 35 students had a combination of low word identification and higher meaning scores. These students had

the lowest word identification scores for the sample and meaning scores slightly above the median.

More than half of the sample (n=103) were grouped in clusters 3 and 4. These two clusters have combinations of students, who had some of the lowest scores for the sample in either word identification or meaning, with some scores above the median and some below the median. Cluster 3 students had the highest word identification scores for the sample, with meaning scores that just below the median. Cluster 4 students had the lowest meaning scores for the sample with word identification scores just above the median.

Motivation for Reading Trends

The Motivation for Reading Questionnaire (MRQ) was used to assess students' motivation for reading within 11 predetermined dimensions noted by the authors. Table 12 highlights the descriptive statistics for each motivation question including means and standard deviations. Similar to the reading descriptive data, several patterns emerged from the motivation data. First, the data does not present motivation overall as high or low for students across all areas. The students' responses showed scores ranging from 2.13 to 3.65 across the motivation questions, with a possible score range from 1 to 4. The question with the lowest score was 11, *I visit the library often with my family*. The highest scores, 3.65, were associated with two questions: 17, *I know that I will do well in reading next year* and 27, *it is very important to me to be a good reader.* Second, with a format ranging from 1= "very different from me" to 4= "a lot like me," the average range would be considered to be scores between 2.0 and 3.0. This data set had 27 items with

scores above 3.0 and 26 items with scores between 2.0 and 3.0. These non-proficient students had more than half of the items with high scores. While it may seem appropriate to say that the students have a high motivation for reading, this inference cannot be made as the students agree with statements and some of the motivation domains that are represented by items that can be considered negative, such as #11, *I visit the library often with my family.* This question examined motivation but it does not mean this is something the student does not enjoy, but something in which they do not participate.

Analyses were run to determine the suitability of the data for further analyses. The MRQ was found to be highly reliable (53 items; $\alpha = .87$). The results of item level Shapiro-Wilk test for normality statistics revealed that each item assessed with the MRQ failed to be normally distributed. This was expected because the sample was specific to non-proficient students and not a range of all students in 3rd, 4th, and 5th grades. Although the data lacked normality, subsequent analyses were completed with the necessary precautions.

Table 12

Motivation Item Descriptive Statistics

Item #	Mean	Std. Deviation	Shapiro-Wilk Statistic
1	3.06	.93	.82*
2	2.66	1.03	.87*
3	3.64	.70	.57*
4	3.04	.89	.83*
5	2.69	1.16	.83*
6	2.73	1.01	.87*
7	3.65	.71	.55*
8	2.91	1.05	.84*
9	3.09	1.12	.75*
10	3.28	.93	.75*
11	2.13	1.15	.81*
12	3.05	1.04	.80*
13	2.63	1.12	.84*
14	2.80	1.12	.83*
15	3.30	.89	.75*
16	3.00	.98	.83*
17	3.65	.66	.59*
18	3.39	.90	.69*
19	3.15	.92	.81*
20	2.83	.99	.85*
21	2.66	1.03	.87*
22	2.99	1.05	.82*
23	2.42	1.29	.78*
24	2.37	1.17	.83*
25	3.56	.82	.59*
26	2.50	1.35	.75*
27	3.49	.80	.67*
28	3.64	.73	.55*
29	2.80	1.08	.87*
30	3.12	1.04	.77*
31	2.53	1.21	.82*
32	2.27	1.22	.80*
33	2.94	1.12	.80*
34	2.44	1.17	.83*

Table 12

Motivation Item Descriptive Statistics

Item #	Mean	Std. Deviation	Shapiro-Wilk Statistic
35	2.41	1.16	.84*
36	3.44	.89	.66*
37	2.64	1.20	.82*
38	3.56	.80	.60*
39	2.60	1.13	.85*
40	2.88	1.17	.79*
41	3.09	1.09	.77*
42	2.81	1.19	.80*
43	3.41	0.91	.68*
44	3.53	0.85	.61*
45	2.32	1.16	.83*
46	3.38	0.92	.69*
47	3.36	0.89	.72*
48	2.94	1.05	.82*
49	3.03	1.14	.77*
50	3.48	0.85	.65*
51	3.34	0.86	.74*
52	2.54	1.21	.82*
53	3.45	.92	.63*

Note**:** df=187. *= p<.05. The information is collapsed across grades and schools and represents the complete sample.

Motivation Factors

Motivation Factor Structure

Wigfield and Guthrie (1997) demonstrated that the 53 MRQ items load onto 11 reading motivation dimensions with their initial sample. Prior to using this instrument to analyze this data set, it was vital to confirm that this factor structure (see Table 13) was represented in this sample (Yuan, 2005). LISREL 9.2 software (Jöreskog & Sörbom,

1996) was used to complete a confirmatory factor analysis (CFA) of the MRQ data from the dataset (n=187). This step was important because the researcher needed to be confident of the applicability of these motivation items to this sample. The distribution of the data did not fall within a normal distribution range as noted by the results of the Shapiro-Wilk Test (see Table 12 above); however, maximum likelihood estimation was used in the confirmatory factor analysis to account for the non-normality within the data.

Goodness of fit statistics were used in CFA to determine how well the a priori model fit the specific data (McDonald & Ho, 2002). When determining the fit, the researcher seeks to determine if the model was a good, marginal, or Poor fit for the data set and to identify the acceptable model for interpretation (Kline, 2005). There are many indices produced in structural equation modeling, but only certain indices were interpreted in this study. There are no required indices to be included in decision making for structural models; however, it is necessary to report a variety of indices to capture different parts of the model fit and make reasonable determinations (Crowley & Fan, 1997). To analyze the structural models for this data set, the SRMR, RSMEA estimate, RMSEA upper limit of the confidence interval, and CFI were used. Kline (2005) suggests inclusion of these indices to make decisions about structural model fit.

Table 13

Initial MRQ Factor Structure by Instrument Authors

Factor	Items
Curiosity	10, 14, 19, 25, 29, 4
Involvement	6, 12, 30, 33, 35, 22
Competition	9, 41, 44, 49, 52
Social	11, 26, 42, 45, 48, 31, 39
Efficacy	7, 15, 21
Compliance	36, 46, 51, 23, 34
Importance	17, 27
Challenge	2, 5, 8, 16, 20
Avoidance	13, 24, 32, 40
Grades	3, 38, 50, 53
Recognition	18, 28, 37, 43, 47

Each of the above indices were included because of the unique information about the model that it presented. The Chi-square value is a traditional fit index that evaluates the model's overall fit. With this index, a good fit generates an insignificant result such as > .05 (Kline, 2005). The root mean square error of approximation (RMSEA) explains how well the model with estimates fit the covariance matrix of the sample. For this index, good fit values range from .05-.08 (Steiger, 2007). The RMSEA also produces lower (LB) and upper bound (UB) limits. The upper bound limit will be included as this

should be preferably less than .08 for a good fit. The standardized root mean square residual (SRMR) is used since the questionnaire assesses consistent levels such as 1-4 (Kline, 2005). Good fit values for SRMR are less than .08 (Hu & Bentler, 1999). The comparative fit index assesses the model fit, including smaller sample sizes. Values larger than .90 are acceptable with a requirement of larger than .95 for a good fit (Hu & Bentler, 1999). The ideal sample size for a CFA in a structural model is 200-400. This sample fell just short, so there were multiple interpretations of the model to ensure the best match between motivational domains and representation of the data. First, the model was run with all parameters simultaneously to determine the fit. This initial model was the item loadings noted by the authors of the instrument. The full model produced the following results: SRMR = .07, RMSEA = .05, RMSEA UB = .06, CFI of 0.90, χ^2= 1920.98, df = 1270, and p = 0.00. While the Chi-Square p-value is not greater than .05, the remaining indices were at acceptable and good levels. When examining the standardized loadings, there were several items (13, 24, 32, 40) that had insignificant loadings (p >.05) and errors with variances. Due to the poor fit of this data, model fit, the errors, and significant loadings needed further examination and the model needed to be examined with subsets of the data.

Baker and Wigfield (1999) had what they noted as an undesirable sample (n=371) and decided to complete three separate CFA's of their data. For their model, they used subsets of the factors, ranging from two to six factors to measure the fit of the model for their data. With this data set close to the ideal sample size, I needed to examine the model with two subsets of the factor structure. The first half of the model (Challenge,

Grades, Curiosity, Involvement, Efficacy, and Avoidance) produced results of: SRMR = .07, RMSEA = .05, RMSEA UB = .06, CFI of 0.88, χ^2= 492.34, df = 335, and p = 0.00. While the Chi-Square p-value was not greater than .05, the remaining indices were at acceptable and good levels. Similar to the full model, this model produced several insignificant standardized loadings. Unlike the full model, this model did not produce any error negative variances. The second half of the model (Competition, Importance, Recognition, Compliance, and Social) produced a SRMR = .07, RMSEA = .07, RMSEA UB = .07, CFI of .88, χ^2= 472.81, df = 265, and p = 0.00. For this half, the Chi-Square p-value is not greater than .05, the CFI value was below the acceptable range, however, the remaining indices were at good levels. Unlike the full model or the other half of this model, there were no insignificant standardized loadings nor error negative variances.

With the identified issues in both the full and split models, changes needed to be made to the factor structure. LISREL software outputs information for modification changes for a better fit for data; however, the suggested changes were determined to not be realistic based on the actual survey questions and the domains. The avoidance factor was responsible for the majority of the issues with the model. The scores were reversed as suggested by the instrument's authors, but it continued to produce issues in the models run. The best modification was to delete the avoidance factor and its associated questions. This was done because this factor was causing the negative variances and the insignificant standardized loadings. Using this modification to the structure, the full model produced these calculations: SRMR = .07, RMSEA = .05, RMSEA UB = .06, CFI of .91 χ^2= 1647.04, df = 1082, and p = 0.00. The modification removed the negative

variances as well as the insignificant loadings and produced a good fit for the data. To verify the fit of the model, the structural model was evaluated with two subsets as completed earlier. Both models suggest a good fit for the model with the data.

While completing the confirmatory analysis, some challenges developed and were overcome. A consistent issue with the Chi-Square test was noted as all of the models continued to produce significant values when an insignificant value is desired. Although this was an issue, it did not impact the model's acceptance as this test assumes multivariate normality, which was not represented for this data set. Second, the large number of items for the assessment made the path diagram uninterpretable. With this, it was not included or interpreted. While determining if the factors and items would be accepted, the loadings were examined for each item. Each item produced significant loadings. This finding supports the use of the 10 factors for subsequent analyses. Table 14 identifies the final factor structure with the items that load onto each factor.

Table 14

Revised Final MRQ Factor Structure

Factor	Items
Curiosity	10, 14, 19, 25, 29, 4
Involvement	6, 12, 30, 33, 35, 22
Competition	9, 41, 44, 49, 52
Social	11, 26, 42, 45, 48, 31, 39
Efficacy	7, 15, 21
Compliance	36, 46, 51, 23, 34
Importance	17, 27
Challenge	2, 5, 8, 16, 20

Motivation Factors

The revised structural model for the data included ten motivation for reading factors (domains) including Challenge, Competition, Compliance, Curiosity, Efficacy, Grades, Recognition, Social, Importance and Involvement. These items were included in the original 11 theoretical domains by the authors of the instrument. The difference was that the dimension of avoidance was not clearly identified due to insignificant loadings and variance errors. The ten domains identified were all labeled according to the original theoretical model by Wigfield and Guthrie (1997) noted in Chapter 3.

Motivation Factor Descriptive Data

Table 15 presents the descriptive information for the motivation domains of each school. When examining the school performances, none of the scores were extremely high or low in comparison to those of the other schools. When examining the individual domains, there was no school that contained all high or low scores for every motivation domain. School 3 had the highest scores in six domains (efficacy, challenge (tie), curiosity, importance, grades, and competition). School 1 had the highest in four domains (challenge (tie), involvement, recognition, and compliance).

In addition to the patterns and differences observed from the chart with descriptive statistics, a MANOVA test was completed to determine if there were significant differences between the school level motivation variables. Table 16 provides the results of the t-tests. There was no evidence that there was an overall significant difference between the schools for the motivation variables: $F(20, 350) = 1.39$, $p = 0.126$.

Table 15

Descriptive Statistics for the Motivation Data by School

Variable	*School 1 n=64*	*School 2 n=77*	*School 3 n=46*	*Total n=187*
Social	2.53	2.56	2.55	2.55
	.61	*.60*	*.69*	*.62*
Challenge	2.88	2.73	2.88	2.82
	.73	*.64*	*.60*	*.67*
Involvement	2.89	2.77	2.80	2.82
	.48	*.60*	*.57*	*.56*
Compliance	3.03	2.99	3.00	3.00
	.52	*.48*	*.42*	*.48*
Competition	3.14	2.90	3.21	3.06
	.66	*.63*	*.63*	*.65*
Curiosity	3.12	3.05	3.19	3.11
	.57	*.65*	*.47*	*.58*
Efficacy	3.28	3.02	3.41	3.20
	.55	*.65*	*.58*	*.62*
Recognition	3.40	3.14	3.38	3.29
	.54	*.69*	*.49*	*.60*
Grades	3.58	3.41	3.66	3.53
	.55	*.69*	*.39*	*.54*
Importance	3.60	3.43	3.75	3.57
	.60	*.69*	*.42*	*.61*

Note: Variables have been sorted with total averages in ascending order. Possible values can range from 1 to 4. Standard Deviations are italicized.

Table 16

MANOVA Test Results for Motivation Differences Between Schools

Statistic	Value	F Value	Num DF	Den DF
Wilks' Lambda	0.86	1.39	20	350
Pillai's Trace	0.15	1.37	20	352
Hotelling-Lawley Trace	0.17	1.40	20	292.24
Roy's Greatest Root	0.13	2.27	10	176

Note: ***=** $p<.05$. F Statistic for Wilks' Lambda is exact**.**

Table 17 presents the descriptive information for the motivation domains of each grade level. When examining the school performances, there were three clear patterns that appear. First, there were six domains which showed increases from 3rd to 5th grade (Efficacy, Challenge, Curiosity, Importance, Competition, and Compliance). Second, recognition was the only domain that showed a consistent decrease from 3rd to 5th grade. Third, there were three domains which showed an increase from 3rd to 4th grade and then a decrease from 4th to 5th (Involvement, Grades, and Social). Overall, the data supported the notion that motivation is multifaceted and not a singularly represented concept. The scores ranged from 2.55 (Social) to 3.57 (Importance). Only three domains could be considered as low motivators for the students with scores below 3.0: Challenge, Involvement, and Social. Two domains, Grades and Importance, could be considered as strong areas of motivation for the students with scores above 3.5. The remainder of the

scores fell between 3.0 and 3.5 (Efficacy, Curiosity, Recognition, Competition, and Compliance).

Similar to the reading data, a MANOVA test was completed to determine if there were significant overall differences between grade level motivation variables. Table 18 provides the results of the t-tests. There was no evidence that there was an overall significant difference between the schools for the motivation variables: $F(20, 350) = 1.43$, $p = 0.107$.

Motivation Clusters

Similar to what was done previously with the reading factors, a cluster analysis was completed with the motivation factor scores. The SAS program was used to generate clusters using both hierarchical and non-hierarchical methods. The average, complete, single, centroid, and median linkage methods were used to determine the most consistent clustering structure. First, the dendograms and cluster group history were examined to determine the number of clusters. The dendograms were examined visually to determine where the largest distance between clusters occurred. With the large sample size, some of these were not visually interpretable. The complete and ward's method visually showed six clusters.

Table 17

Descriptive Statistics for the Motivation Data by Grade Level

Variable	*3rd n=83*	*4th n=54*	*5th n=50*	*Total n=187*
Social	*2.49*	*2.71*	*2.46*	2.55
	.68	*.55*	*.57*	*.62*
Challenge	*2.72*	*2.82*	*2.98*	2.82
	.74	*.62*	*.55*	*.67*
Involvement	*2.76*	*2.92*	*2.81*	2.82
	.64	*.46*	*.49*	*.56*
Compliance	*2.97*	*3.03*	*3.04*	3.00
	.48	*.49*	*.46*	*.48*
Competition	*3.01*	*3.09*	*3.10*	3.06
	.70	*.64*	*.59*	*.65*
Curiosity	*3.04*	*3.15*	*3.18*	3.11
	.63	*.58*	*.48*	*.58*
Efficacy	*3.12*	*3.23*	*3.29*	3.20
	.64	*.64*	*.55*	*.62*
Recognition	*3.32*	*3.30*	*3.21*	3.29
	.64	*.55*	*.60*	*.60*
Grades	*3.43*	*3.67*	*3.55*	3.53
	.62	*.48*	*.42*	*.54*
Importance	*3.51*	*3.57*	*3.65*	3.57
	.69	*.61*	*.45*	*.61*

Note: Variables have been sorted with total averages in ascending order. Possible values can range from 1 to 4. Standard Deviations are italicized.

Table 18

MANOVA Test Results for Motivation Differences Between Grade

Statistic	Value	F Value	Num DF	Den DF
Wilks' Lambda	0.85	1.43	20	350
Pillai's Trace	0.15	1.43	20	352
Hotelling-Lawley Trace	0.16	1.42	20	292
Roy's Greatest Root	0.09	1.59	10	176

Note: *= p<.05. Dependent Variable=Grade, Independent Variable(s) = Motivation Domains.

The cluster history was examined with the same goals while identifying the cluster solution that would have the largest distance while keeping the smallest RMSSTD and Semi-partial R-Squared values and the highest R-squared values. This procedure required the researcher to examine each line, comparing them to the line before and after to determine where the largest "jumps" occured and use the cluster solution above this. For this set, the largest jumps occurred at the line for cluster six for semi-partial R-square and R-Square, this suggested a six cluster solution (see Table 19). A six cluster solution was selected as the best fit to proceed for non-hierarchical methods. The means from this cluster solution were used as initial seeds, or starting points, to generate refined clusters with students who were closest to the initial seeds.

Table 19

Motivation Cluster History

Number of Clusters	Clusters Joined		n	New Cluster RMS Std Dev	Semipartial R-Square	R-Square	Between Cluster Sum of Squares
10	CL15	CL24	35	.43	.02	.55	11.32
9	CL12	CL16	28	.51	.02	.53	12.07
8	CL19	CL17	32	.45	.02	.51	14.47
7	CL13	CL14	51	.41	.02	.48	14.88
6	CL9	CL18	36	.55	.03	.46	17.06
5	CL7	CL23	79	.40	.03	.43	19.80
4	CL6	CL11	41	.61	.03	.39	22.26
3	CL10	CL8	67	.48	.04	.36	23.24
2	CL3	CL4	108	.58	.10	.26	64.49
1	CL2	CL5	187	.60	.26	.00	171.83

Note: Ward's Clustering Method Used. Only possible clusters less than 10 were included to save space. Shaded line identifies greatest "jumps" and the best cluster.

The k-means non-hierarchical clustering method was used to generate groups. The Ward's clustering method was selected as the best option for grouping because it grouped more similar students together without having clusters with one to two students. The results produced clusters with varying motivational patterns (see Table 20).

Table 20

Motivation Clusters Summary Data

Cluster	n	Percentage of Sample	Efficacy	Challenge	Curiosity	Involvement	Importance	Recognition	Grades	Competition	Social	Compliance
1	40	21.4%	3.88	3.56	3.62	3.16	3.95	3.71	3.92	3.73	3.05	3.17
2	39	20.9%	3.32	3.06	3.44	3.12	3.85	3.53	3.74	3.10	2.79	3.08
3	37	19.8%	2.80	2.42	3.09	2.99	3.41	3.31	3.46	2.94	2.72	3.03
4	35	18.7%	3.31	2.71	2.87	2.35	3.73	3.35	3.51	3.09	1.90	3.12
5	31	16.6%	2.63	2.38	2.49	2.51	2.87	2.54	3.10	2.45	2.27	2.65
6	5	2.6%	2.53	1.44	1.97	1.73	2.70	1.96	2.05	1.80	1.54	2.28

When looking at each cluster, there were unique characteristics present. First, no cluster contained more than 25% of the sample. This meant there were not groups that were overtly large with the most similar patterns. Second, there was no single consistently high motivator across the six groups. The domains of importance and grades were the highest motivator between the six groups.

A closer examination of the clusters provided a clearer interpretation. Clusters one and six, respectively, represent the highest motivated students and the lowest motivated students. The highest motivated students in cluster one represented the largest cluster. They have relatively the highest scores for each motivational domain. The five students in cluster six students have the lowest motivation scores for each motivational

domain. Clusters two and five have students with consistently high or average motivators. Cluster two students have consistently high scores with the exception of their lack of participation in social related reading activities. The students in cluster five are average with most scores between 2.0 and 3.0 with the exception of Grades, which is above 3.0. Last, the students in clusters three and four are characterized as "mixed motivated." They have combinations of high and low motivators, and no noticeable high or low areas.

Motivation and Reading Clusters

Motivation and reading factors were previously identified within this dissertation. The exploratory factor analysis identified two reading factors: word identification and meaning. The confirmatory factor analysis confirmed ten motivation factors: Efficacy, Challenge, Curiosity, Involvement, Importance, Recognition, Grades, Competition, Social, and Compliance. Earlier, the cluster analysis procedure identified four clusters that represented the reading factors, and six that represented the motivational factors. While these analyses provided important information about the patterns of students, the information is limited to grouping based on either motivation or reading. Previous researchers (Baker & Wigfield, 1999; Guthrie, Coddington, & Wigfield, 2009) used motivation to group students into clusters, then used summary statistics to describe the patterns of performance for their sample. While this is acceptable, a grouping that takes into account both the reading and motivational factors generates clusters that are representative of students' patterns of performance with both areas. This study had a goal to better understand non-proficient students by grouping the students based on both

their motivation and reading descriptors using the clustering process. I use this section to present results of the cluster analysis, including both reading and motivation factors combined, to understand the different patterns of reading and motivation that exist amongst non-proficient minority students. The process is explained, followed by a brief description of the results of the process.

Although the number of clusters from the reading and motivation data were identified separately, this is not representative of the true number of clusters when including all factors together. Therefore, the complete process of using hierarchical and non-hierarchical clustering techniques was completed to determine the number of groups and define the membership (Sharma, 1996). As with the previous cluster analyses, the clustering process was completed with the SAS program using both hierarchical and non-hierarchical methods including analyses using all of the five linkage methods. See above sections for the specific steps followed for this analysis.

The cluster history was examined with the same goals, while identifying the cluster solution that would have the largest distance while keeping the smallest RMSSTD and Semi-partial R-Squared values and the highest R-squared values. For this set, the largest jumps occurred at the line for cluster six for Semi-partial R-square and R-Square, suggesting a six cluster solution (see Table 21). Similar to the motivation cluster analysis, a six cluster solution was selected as the best fit to proceed for non-hierarchical methods. The means from this cluster solution were used as initial seeds, or starting points, to generate refined clusters with students who were closest to the initial seeds.

Table 21

Combined Cluster History

Number of Clusters	Clusters Joined		n	New Cluster RMS Std Dev	Semipartial R-Square	R-Square	Between Cluster Sum of Squares
10	**CL41**	**CL23**	14	.54	.01	.48	4.23
9	**CL14**	**CL34**	35	.50	.03	.45	4.31
8	**CL11**	**CL21**	18	.63	.01	.44	4.41
7	**CL18**	**CL8**	37	.62	.03	.41	4.60
6	**CL16**	**CL9**	46	.58	.04	.37	5.24
5	**CL6**	**CL10**	60	.65	.08	.29	5.95
4	**CL7**	**65**	38	.65	.02	.27	6.17
3	**CL5**	**CL12**	148	.61	.08	.19	6.21
2	**CL4**	**38**	39	.69	.03	.16	7.56
1	**CL3**	**CL2**	187	.68	.16	.00	8.61

Note: Ward's Clustering Method Used. Only possible clusters less than 10 were included to save space. Shaded line identifies greatest "jumps" and the best cluster.

With the number of clusters determined, the non-hierarchical process was used to refine the membership in each of the six groups. This process was completed by using the means from each cluster as the initial seeds (starting points) for the refining process. This process grouped students around the starting values, which ensured students were close to others with similar scores. The revised six cluster solution produced clusters with varying

frequencies and distances from other clusters. Table 22 identifies the frequencies, along with the summary data for each factor.

Table 22

Combined Clusters Summary Data

Cluster	1	2	3	4	5	6
Frequency	30	25	48	19	44	21
Compliance	3.13	3.07	2.91	2.97	3.20	2.58
Social	2.82	2.21	2.35	2.44	3.03	2.07
Competition	3.64	2.66	3.01	3.10	3.31	2.24
Grades	3.89	3.41	3.61	3.22	3.81	2.65
Recognition	3.65	2.84	3.30	3.27	3.70	2.41
Importance	3.92	3.42	3.64	3.24	3.85	2.79
Involvement	3.18	2.72	2.72	2.75	3.08	2.17
Curiosity	3.68	2.85	2.98	3.00	3.40	2.36
Challenge	3.52	2.76	2.55	2.56	3.15	2.06
Efficacy	3.83	3.16	3.11	2.86	3.37	2.51
Meaning	.77	1.55	-.61	.04	-.50	-.53
Word ID	.63	.29	.57	-2.08	-.21	-.22

Each profile is unique and the patterns present were used to better understand each group of students. Three unique patterns are present within the data. First, through all of the clusters, the motivation domains of Grades and Importance of reading were

consistently the highest motivators for reading. Because these are high for the majority of the sample, they will not be used to describe and compare the clusters later. Second, the reading data within the clusters have combinations of high and low with scores above and below the median. Third, the social domain has the lowest scores for all the clusters, with the exception of cluster six, which comes close. Last, the students in cluster one have the highest motivating areas for reading and the highest word recognition scores, but do not have the highest meaning scores. The paragraph provides descriptive information to differentiate the motivation for reading and reading performances between the clusters.

Each cluster has unique characteristics that help with better understanding these non-proficient readers. Clusters one and five contained the students with the highest motivation for reading with consistently high scores for each motivation domain in comparison to the other clusters. The students in cluster one have high word identification and meaning scores. The students in cluster five have low word identification and meaning scores as they fell just below the median. The students in clusters two and three have higher word identification scores; however, their meaning abilities differed. Cluster three students have the lowest meaning scores while cluster two have the highest meaning scores. When examining their motivation for reading, Grades and Efficacy drive these students, while Challenge and Involvement do not necessarily drive these students to participate in reading related activities. Cluster four students have the lowest word recognition, while having average meaning scores. These students' motivation for reading have strength in their Curiosity about reading and their

competitive nature. Last, cluster six students have the lowest scores in all motivation to read areas. Grades are their highest motivator to participate in reading activities.

This chapter presented the results of the research study. Through the various analysis, the results highlighted the differences that exist between non-proficient students. These students overall are performing below grade level in all areas and have significant differences between their comprehension of narrative and expository texts. Using factor analysis, two factors were found that represent the reading data; word identification and meaning. Ten of the motivation for reading domains were identified using factor analysis of the motivation data set; however, the domain of avoidance was not present. These results provide support for three major ideas. First, there is heterogeneity in the academic performance and motivation for reading of non-proficient readers. Second, the idea that a one-size-fits-all model does not work for providing remedial instruction for non-proficient readers (Allington, 2009). Last, the results support the need to use motivation when addressing the academic needs of non-proficient students.

CHAPTER V

DISCUSSION

The purpose of this study was to examine the reading and motivational profiles for students who have been identified as non-proficient readers. Accountability policies tend to unfairly penalize those schools with high percentages of marginalized groups, students of color and those living in poverty (Hursh, 2007). Because these schools often receive low-performing or failing designations, research needs to include such students in their studies if we want to understand their reading strengths and weaknesses. Au (2009) described the "zip code effect," where schools within geographical areas tend to represent a specific socio-economic status and ethnic makeup. This study purposefully included zip code schools to ensure the representation of these marginalized students, who often are criticized for being "unmotivated" and/or low achievers. Moreover, these schools traditionally focus solely on word identification strategies when providing remediation. If these strategies do not address students' overall needs, then schools need to use a variety of other assessments and interventions to address the heterogeneity that exists amongst these students.

This chapter first discusses individual reading and motivational profiles. Within this discussion, I focus mainly on how the profiles from the separate analyses in this study differed from existing studies where such profiles also were generated. Second, I place the larger emphasis of this chapter on a discussion of the combined reading and

motivational profiles as these profiles were the goal of the study. Within this chapter, I highlight similarities and differences between the separated and combined clusters. Last, I share implications for practice and policy, followed by suggestions for the need to conduct future research.

Reading Profiles

Researchers have presented different profiles of readers (Buly & Valencia, 2002; Dennis, 2013; Leach et. al, 2003; Leseaux & Kieffer, 2010; Meyer et. al, 2013; Rupp & Leseaux, 2006; Pierce et. al, 2007). When identifying such profiles, only two studies placed an emphasis on non-proficient readers and used assessments measuring the National Reading Panels' (NICHD, 2000) five components of reading (Buly & Valencia, 2002; Dennis, 2013). Both studies identified a three-factor representation of word recognition (decoding), fluency, and meaning. Both studies used the three factors to generate from four to 10 profiles.

In the reading only cluster analysis of this study, two factors emerged, word identification and meaning. Thus, unlike most of the previous studies using exploratory factor analysis, except for the Rupp and Leseaux (2006) study, fluency did not appear as a separate factor. The two factors, word identification and meaning, were used in a cluster analysis and generated four reading profiles. There are three important things to note from these four profiles. First, unlike most existing research of reading profiles (Buly & Valencia, 2002; (Leach et. Al, 2003; Leseaux & Kieffer, 2010; Meyer et. Al, 2013; Rupp & Leseaux, 2006; & Pierce et. al, 2007), this study's separate analysis failed to identify a group of non-proficient readers who had a combination of low scores on the

word identification and meaning factors. This difference mainly related to students' word recognition abilities, which were clearly somewhat stronger in this study than in previous related studies. An important note, however, the subsequent combined analyses did reveal such a pattern, but only represented a small portion of the sample. Second, no single set of profiles represented all non-proficient readers (Buly & Valencia, 2002); differences in profiles are a direct reflection of the sample analyzed. This finding runs counter to present accountability interventions (Allington, 2009) where non-proficient readers are presented with one-size-fits-all remedial instruction. Third, overall, students in each cluster scored higher on their ability to decode or recognize words than on their comprehension of texts. Moreover, differences of almost a grade level existed between students' ability to comprehend narrative versus expository texts. Other profile specific similarities and differences will be presented when the results from the combined analysis are discussed.

Motivation Profiles

Motivation for reading explains why students approach or avoid reading activities. While researchers have explored students' motivation for reading, their samples have not emphasized non-proficient readers. Based on its existing use with elementary students and its range of motivation domains, the MRQ was used to generate motivational profiles. Existing studies have identified six to 11 factors. This study's confirmatory factor analysis identified 10 of the 11 original factors. These included Challenge, Competition, Compliance, Curiosity, Efficacy, Grades, Recognition, Social, Importance and Involvement. Unique to this study, an avoidance factor was not

discovered. This is important because it documents students' positive orientations towards reading in comparison to some general expectations for this group of readers. In other studies, avoidance was a common factor (Baker & Wigfield, 1999; Unrau & Schlackman, 2006; Wigfield & Guthrie, 1997). Moreover, an avoidance factor is a central component to the expectation-value model, upon which the MRQ is based. More emphasis will be directed towards this point when discussing the combined analysis.

The 10 motivation factors were used in the clustering process to generate profiles. This analysis produced a six-cluster solution. The cluster analysis produced six profiles, which was fewer than the seven profiles in the work of Baker and Wigfield (1999). These differences in the number of profiles were a clear reflection of the sample used, in that, this study's sample included greater heterogeneity. Subsequent discussion of these differences is presented with the analysis of the combined clusters.

Motivation and Reading Profiles

This study's main purpose was to evaluate reading and motivation profiles in a combined analysis for non-proficient readers. The analysis specifically addressed marginalized groups, including high percentages of ethnic minority students whose families lacked economic resources. Prior studies have failed to directly address such student populations, nor have they simultaneously analyzed reading and motivation factors represented for non-proficient readers.

To better understand these students, combined reading and motivation profiles were generated (see Table 29). The motivational domains of Grades and Importance received the highest ratings across all profiles, whereas Social domain had the lowest

ratings. As expected, the patterns of the ratings differed across the six profiles. When interpreting these profiles, I used their reading performances as a basis to describe the findings because reading proficiency was the main construct of the study. The profiles were named using descriptive terminology that will allow teachers to identify students' placement using the diagnostic reading behaviors of students as well as their motivation for reading characteristics.

First, while two of the groups had reading performances above the mean for this sample, their motivational orientations differed markedly. While the scores were above the mean, these students are non-proficient and not meeting grade level expectations. Students in the first profile, *Motivated Readers* (*n=30*), performed higher on meaning, yet lower on word recognition than students in the second profile, and had above average ratings on each of the motivation indices. In particular, these students had the highest scores on Importance, Curiosity, Recognition, and Competition. Students in the second profile, *Confident and Compliant Readers* (*n=25),* performed above average on both meaning and word recognition measures, yet had average motivation scores for seven of the motivation measures, with below the mean scores for Social, Competition, and Curiosity. The students in both profiles scored above the mean for word identification and meaning, the difference between these profiles is attributed to the motivation scores being higher for profile one than profile two.

The next two profiles had combinations of the lowest scores for one of the reading factors. Students in profile 3, *Competitive Word Callers (n=48),* performed above average on word identification, but had the lowest scores for meaning in the sample, and

had average ratings for eight of the motivation indices with Challenge and Social having below average ratings. Profile 4 students, *Curious Comprehending Readers (n=19),* performed at the mean for meaning, but had the lowest word identification scores in the sample. Six of the motivation domains were average for these students with below the mean ratings for grades, importance, challenge, and efficacy. These two groups had similar patterns of high and low motivation areas; however, the main difference here is their reading performances. The students in profile three are "*word callers*", who are not making meaning, while the students in profile four are struggling with their word identification skills.

The final two profiles had lower than the mean scores for both reading factors. Both clusters had almost identical scores for both word identification and meaning. The differences between these students once again was attributed to the motivation domains. Profile five students, *Motivated Multi-Need Readers (n=44*), had four motivation ratings above the mean in Grades, Recognition, Importance, and Social with the other motivators falling below the mean. The students in profile six, *Compliant Multi-Need Readers (n=21),* had scores below the mean for each of the motivators. Although they are below the mean, they still had a preferred motivator, being compliant. The difference between these two profiles is attributed to motivation. The students in profile five are low performing but have high motivation scores, while the students in profile six have low reading performance patterns and low motivation scores.

Differences Between Conducting a Separate Versus a Combined Analysis

There are three clear similarities and differences to note between the reading profiles and the combined profiles. First, the number of profiles were fewer when the reading factors were evaluated separately. There are two reasons for this finding. Statistically, we would expect fewer profiles due to the number of considered variables. Next, the motivation variables allowed for further discriminations when considering students' performances across the two domains. Second, the separate analysis of the reading clusters did not identify a group of students who had below the mean scores for both word identification and meaning. The combined cluster analysis identified two groups that had a combination of below mean scores for both word identification and meaning. The original four patterns were present within clusters one through four; however, by adding a motivational component, students who were low in both reading areas were separated into two unique groups. Last, each of the largest profiles in both analysis had what Buly and Valencia (2002) term "word callers." These students had stronger word identification scores and weaker meaning as they were unable to make meaning at the same level that they could decode.

When examining differences between the separate and combined analysis for motivation, there were four similarities and differences to note. First, the separate motivation analysis produced a profile with only five students. This is quite a small group considering the sample size. In comparison, the smallest profile in the combined analysis was 19 students. Second, in the combined clusters, importance and grades were consistently the highest motivators for each cluster. In the motivation only analysis,

profile five had recognition as the highest motivator. Third, both sets of clusters contained a profile with the highest scores for each motivation domain and another profile with students with the lowest scores. There are two possible explanations for these differences. Statistically, when one increases the number of variables, greater variation exists. Next, due to the nature of the variables across the two domains of reading and motivation, greater differentiation resulted. These explanations might have operated together to produce these differences.

In summary, these profiles demonstrated a need to include multiple variables, particularly those related to motivation, to better understand non-proficient students. When examining the patterns present, it was essential to understand the reading strengths and weaknesses as well as identifying the most versus less preferred motivators. Instead of classifying non-proficient and proficient readers as "motivated" or "not motivated," we should adopt a more multi-dimensional perspective by evaluating the multiple reasons as to why students are or are not motivated to engage in a particular task (Baker & Wigfied, 1999). That is, motivation is multi-dimensional: it consists of patterns of underlying motivational constructs that guide students' participation in reading. These profiles consisted of patterns with some students having preferences that motivate them to participate in reading related activities and other areas that are not as desired. Also, the identification of motivation in addition to the reading patterns is essential because the low performing readers were not represented solely with the lower motivations for reading. These lower performing students are often considered by teachers as not motivated when

they have differing motivators. To the contrary of existing work, with this "zipcode" population, they did not demonstrate an avoidance performance orientation.

The profiles demonstrated that non-proficient readers from marginalized populations were not a homogenized group (Dennis, 2013). The profiles consisted of various numbers of students, made up of various ethnic groups. No one ethnic group was represented as the dominant population in any of the profiles. Regardless of the profile, they have unique needs that must be addressed via assessments with interventions to build on their strengths while addressing their weaknesses. A one-size-fits-all instructional approach does not benefit these students because it fails to place a direct emphasis on the areas of strength and weakness.

Finally, when considering motivation, it is vital to dig deeper than just acknowledging domains which are preferred or less preferred for students. In this study, the motivation areas of Importance, Grades, and Social had consistent patterns across the various profiles. As such, only interpreting these areas as part of the profiles would have caused all profiles to be noted with almost identical motivational patterns. It is important to take into consideration the overall domains with higher and lower preference and understand how it impacts students' total performances.

Implications

Informing Practice

Differentiated instruction is a key component for these non-proficient students. Identification of a student as non-proficient via a standardized assessment does not adequately describe the many facets of a student's reading or motivational performances.

The main point is that non-proficient students fall into multiple patterns. Teachers must use assessments that measure beyond the word identification components of reading. These assessments will help teachers to identify specific patterns of reading strengths and weaknesses for these students. The patterns can then be used to identify specific areas for interventions to assist with remediating areas of weakness and ensuring the existing achievement gaps are closed.

The results of the study support the need to understand and identify the motivation for reading for non-proficient students. Some students within a classroom may appear as low in all reading skills, however; they may not have low motivation preferences across all domains. There will be clear preferences across their motivational orientations. When teaching non-proficient students, these areas can be addressed as motivators to encourage student participation in reading activities. In this study, social reading was a low preference across all profiles. The students in this study would not benefit from tasks that require them to read with a family member or complete specific reading related activities outside of class (i.e., visiting the library, helping friends with their schoolwork, telling their family and friends about what they are reading). Of course, this recommendation might change after students improve their reading. However, with the clear high scores for importance of reading, these students would benefit from the teacher emphasizing why particular activities are of importance. While multiple motivation surveys exist, surveys used should measure multiple motivation domains. This would ensure that teachers adequately identify multiple motivators present with their students.

These profiles present specific differentiations that can be used for students who are represented within each profile. In differentiating, teachers should place emphasis on the reading weaknesses of students, as this is the cause of students reading failures, while also engaging students in reading activities based on their motivation domains with the highest scores. In describing implications for differentiating instruction for each of the profiles, I looked to those motivation factors which students in a profile rated most highly as areas upon which teachers could focus their efforts to increase engagement. The students who are described as *Motivated Readers* will benefit from interventions devoted to helping them make meaning when they read. Regarding motivation, they uniquely had high scores on 9 of the 10 items, giving teachers multiple ways to promote their engagement. They particularly rated Grades, Importance, Curiosity and Efficacy as high areas; therefore, teachers could appeal to these areas to promote their engagement. They also could use any of the other five areas as an approach. These interventions and activities should center on things of interest to the students, and things that will peak their curiosity and help to increase their engagement while working on the students making meaning (Vansteenkiste, Lens, & Deci, 2006). The *Confident and Compliant Readers* believe they are decent readers, but they are also compliant, completing reading activities because of external requirements. Regarding motivation, their four highest ratings were Grades, Importance, Efficacy and Compliance factors. Interventions for these students should emphasize fluency to increase the amount of words read per minute, while continuing to reinforce making meaning. These interventions should encourage students to continue to have strong beliefs of themselves as good readers meeting comprehension

proficiency, but need to read with increased speed and accuracy (Wigfield, Guthrie, Tonks, & Perencevich, 2004).

The *Competitive Word Callers* will benefit from interventions focused on making meaning. These students had the highest scores for grades, importance, efficacy and competition and a strength in word recognition. These students must continue to hear and believe they are good readers (Wigfield et. al., 2004), but with the emphasis of being a good reader shifting from word identification to making meaning. With their competitive nature, their interventions on making meaning should include charts or lists that acknowledge their continued improvement in making meaning.

The *Curious and Competitive Comprehending Readers* need an emphasis placed on their word recognition skills while still addressing meaning. These students had the highest scores for Grades, Importance, Recognition, and Competition. Comprehension (making meaning) is the ultimate goal of reading and although interventions for this group should emphasize decoding and/or fluency, they should additionally address the students making meaning. With the high desire to be recognized for their reading behaviors, these students should be recognized for accomplishments through a goal chart or a similar activity that allows the teacher to celebrate and recognize these student's success.

The *Motivated Multi-Need Readers* need interventions emphasizing both word recognition and meaning, as both are weaknesses. Regarding motivation, similar to profile one, they uniquely had high scores on all ten of the motivation items, giving teachers multiple ways to promote their engagement. They particularly rated Grades,

Importance, Curiosity and Recognition; therefore, teachers could address these areas to promote reading engagement. Interventions for this profile could be completed by introducing and reinforcing decoding strategies during intervention time. While addressing these strategies, the students would also benefit from explicit teaching of comprehension related strategies through a variety of texts read by the students, with the students and to the students. The interventions and activities for this group should encourage the curiosity of students as they explore the reading by connecting to topics and subjects with high interest and using highly engaging strategies (Meece, Anderman, & Anderman, 2006).

The *Compliant Multi-Need Readers* represent the most challenging of the profiles. These students have low scores for word recognition and meaning, and after Grades and Importance, their highest motivational ratings are for Compliance. A teacher would not want to encourage this set of behaviors by themselves; instead, they should focus on promoting their curiosity, which has a closer rating, as a means to encourage their engagement. Interventions for students in this cluster should emphasize meaning first, while also addressing word recognition skills. Interventions and activities for this group should encourage engagement by addressing their curiosity through high interest reading texts and hands-on activities (Guthrie et al., 2007).

Informing Policy

As federal and state governments continue to enact accountability legislation, they must consider how and what interventions will be implemented to meet these accountability requirements. Instead of promoting one-size-fits-all remediation

(Allington, 2009), federal funding should be used to support the identification of differentiation strategies with non-proficient readers. As emphasized in the implications for practice section, these strategies should not be limited to programs, but should be inclusive of actual reading and motivation strategies that can be shared with teachers to use in their classrooms to differentiate instruction. With the low proficiency of marginalized groups, they must be a direct beneficiary of new interventions. The interventions must consider who will benefit from the strategy, with the emphasis placed on non-proficient students.

As mandates continue to be made with regards to education, policy makers need to make realistic considerations. The results of this study demonstrate the heterogeneity that exists among non-proficient students. With this range of patterns, it is not realistic to expect all students to meet grade level expectations immediately. Mandates for proficiency should take this into consideration. Proficiency models should also consider growth as an accountability factor. These models should take into account growth of individual reading skills that are not measured by a single end-of-grade assessment.

Last, policy makers on local levels should continue to encourage differentiation and equitable interventions for each reader. This differentiation for reading could occur in two ways. First, schools can continue to require an intervention and enrichment block. This time could be used to provide direct needs-based instruction that is related to the students' weaknesses (Averill, Baker, & Rindaldi, 2014). Second, schools can continue to require a guided reading block. Guided reading is a part of a balanced literacy framework that provides small group explicit instruction rooted in the individual needs of

students (Fawson & Reutzel, 2000; Fountas & Pinnell, 2012). This guided reading time is beneficial for students to practice a variety of reading related skills daily with text on their instructional level. This allows non-proficient students like those in this study to receive instruction that addresses their weakness on a daily basis.

Future Work

From this study, multiple follow-up studies could occur. I will discuss four possible avenues. First, in this sample of non-proficient readers, the motivation domain of avoidance was not represented in the data. The sample size of the data set was close to the acceptable range, but realistically it fell just slightly below the 200-400 range. Other studies identified similar factor structures, but the MRQ structural model should be examined using a larger sample, ideally 300-400 non-proficient students. This will determine if there are consistent motivation domains represented across multiple samples.

Second, the motivation and reading profiles should be studied longitudinally along with interventions based on their motivational preferences and their reading strengths and weaknesses. Are memberships in profiles changing as would be desired, or are they showing consistent increases in multiple areas and maintaining the same patterns? While reading profiles are useful for understanding the patterns of non-proficient students, the ultimate goal is reading proficiency. As such, we ideally want the students' patterns to change as they continue to grow as readers and hopefully achieve proficiency. Are these patterns changing? Do components change? How do the changes occur? These are all questions that could be investigated in a longitudinal study.

Third, fluency was not identified as a separate factor in this study. Theoretically this combined factor including rate and accuracy would be expected with students who are exposed to interventions and instruction focused on word recognition. Perhaps this finding is related to the types of interventions offered to students, where the emphasis was on the decoding of individual words with minimal focus on the reading of connected text. Is this the case with other non-proficient students? Future work should investigate a larger number of reading variables within the five areas of reading to determine if these two areas will be combined or separate into isolated factors.

Fourth, the descriptive data noted at least one grade level difference between the comprehension of narrative and expository texts for this sample. With the implementation of Common Core State Standards, there has been a push to increase students' experiences with expository texts. There is a need to determine if the recent emphasis on expository texts has resulted in increased comprehension of expository texts. With this, we must determine whether or not this pattern is unique to this sample or is a common trend amongst all non-proficient readers.

Limitations

Limitations exist with the current study, although I attempted to avoid many of these. First, this study contained a specific sample not specifically present within all schools. The sample was non-proficient students, specifically those who are from marginalized (ethnic and economic) groups. With this, the results of this study with regards to factors may not be generalizable to all non-proficient groups, nor to proficient students. Second, the largest possible sample representing "zip code" schools was used

in the study. A confirmatory factor analysis was used to analyze the fit of the MRQ domains. While my sample came close, it was not within the desired range of 200-400 for a CFA. Future work should seek to identify and use a larger sample to confirm the lack of representation of the avoidance factor. Last, in terms of evaluating comprehension, students' background knowledge impacts their ability to make meaning from text. The passages used in this study were selected by staff at the schools so that all students should have had background knowledge of the topics. However, there may have been passages for which the students had little or no background knowledge, which would impact their ability to connect and make meaning.

Conclusions

These results are beneficial to parents, teachers, administrators, and policy makers. There is no one-size-fits-all approach to remediating non-proficient readers. These readers have multiple patterns of strengths and weaknesses. In addition to their patterns of reading strengths and weaknesses, these students also have multiple patterns of motivation preferences. While this study identified six profiles representing reading and motivation patterns, the number of profiles are not important. The patterns highlight the need to dig deeper and examine the motivation preferences, and reading strengths and weaknesses. The designation of "non-proficient" from external assessments does not provide information necessary to provide a direct intervention to improve the academic outcomes for these students. This designation should merely be an identifier that gives a license to dig deeper through multiple assessments in order to understand what specifically needs to be addressed. This assessment data can be used to provide

meaningful differentiation for these non-proficient students. Through differentiation, the ultimate goal of student growth and proficiency may be achieved.

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APPENDIX A

MOTIVATION FOR READING QUESTIONNAIRE ITEMS

Students choose one of the following options for each statement below. If the statement is **very different from you**, circle a 1. If the statement is **a little different from you**, circle a 2. If the statement is **a little like you**, circle a 3. If the statement is **a lot like you**, circle a 4.
1. I like being the best at reading.
2. I like it when the questions in books make me think.
3. I read to improve my grades.
4. If the teacher discusses something interesting I might read more about it.
5. I like hard, challenging books.
6. I enjoy a long, involved story or fiction book.
7. I know that I will do well in reading next year.
8. If a book is interesting I don't care how hard it is to read.
9. I try to get more answers right than my friends.
10. I have favorite subjects that I like to read about.
11. I visit the library often with my family.
12. I make pictures in my mind when I read.

13. I don’t like reading something when the words are too difficult.
14. I enjoy reading books about people in different counties.
15. I am a good reader.
16. I usually learn difficult things by reading.
17. It is very important to me to be a good reader.
18. My parents often tell me what a good job I am doing in reading.
19. I read to learn new information about topics that interest me.
20. If the project is interesting, I can read difficult material.
21. I learn more from reading than most students in the class.
22. I read stories about fantasy and make believe.
23. I read because I have to.
24. I don’t like vocabulary questions.
25. I like to read about new things.
26. I often read to my brother or my sister.
27. In comparison to other activities I do, it is very important to me to be a good reader.
28. I like having the teacher say I read well.
29. I read about my hobbies to learn more about them.

30. I like mysteries.
31. My friends and I like to trade things to read.
32. Complicated stories are no fun to read.
33. I read a lot of adventure stories.
34. I do as little schoolwork as possible in reading.
35. I feel like I make friends with people in good books.
36. Finishing every reading assignment is very important to me.
37. My friends sometimes tell me I am a good reader.
38. Grades are a good way to see how well you are doing in reading.
39. I like to help my friends with their schoolwork in reading.
40. I don't like it when there are too many people in the story.
41. I am willing to work hard to read better than my friends.
42. I sometimes read to my parents.
43. I like to get compliments for my reading.
44. It is important for me to see my name on a list of good readers.
45. I talk to my friends about what I am reading.
46. I always try to finish my reading on time.

47. I am happy when someone recognizes my reading.
48. I like to tell my family about what I am reading.
49. I like being the only one who knows an answer in something we read.
50. I look forward to finding out my reading grade.
51. I always do my reading work exactly as the teacher wants it.
52. I like to finish my reading before other students.
53. My parents ask me about my reading grade.